Utah Medical Education Council
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Utah's Dentist Workforce, 2006

A Study of Workforce Trends and Capacity to Provide Service

Utah Medical Education Council
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Utah's Dentist Workforce, 2006:
A Study of Workforce Trends
and
Capacity to Provide Service

July, 2008

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Utah Medical Education Council

The Utah Medical Education Council (UMEC) was created in 1997 by H.B.141 out of a need to secure and stabilize the state's supply of healthcare clinicians. This legislation authorized the UMEC to conduct ongoing healthcare workforce analysis and to assess Utah's training capacity and graduate medical education (GME) financing policies. In addition, H.B. 141 requires the UMEC to advise on these issues and to provide policy recommendations for achieving state workforce objectives.

Charge to the Utah Medical Education Council

- Determine the number and mix of healthcare professionals needed in Utah and develop strategies to assure that the projected requirements are met.
- Identify ways to protect and maximize existing revenue streams that support GME.
- Obtain and manage federal waiver so that receipt of federal funds is linked to addressing Utah's healthcare workforce requirements.
- Advise on strategies to ensure that Utah has an adequate healthcare workforce.

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The UMEC would like to thank its staff for their assistance and the following members of the Dentist Workforce Advisory Committee for their time and expertise in developing this report:

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Executive Summary

Dentist workforce status in the nation has gone from an oversupply in 1983[1] to a projected undersupply by the year 2020[2]. Given the national trend of decreasing dentist-to-population ratios, the Utah Medical Education Council (UMEC) saw the need for an assessment of the Utah dentist workforce.

Driven by the legislative mandate to conduct ongoing healthcare workforce analysis[3] and given the status of the national dentist workforce, the Utah Medical Education Council (UMEC) conducted a survey of all dentists licensed by the Utah Division of Occupational and Professional Licensing (DOPL). Self-reported dentist workload data and a trend of declining dentist-to-100,000 population ratio in Utah since 2002, suggest that Utah's workforce may be thinning.

If the projected national undersupply occurs, Utah's reliance on national dental schools for educating its workforce may intensify the thinning of the workforce trend. The following information about the Utah dentist workforce was elicited from the survey and supporting data:

Highlights of the Current Utah Dentist Workforce:

- As of 2006, there are 1,467 active provider* dentists in Utah. *(Ref: Pg. 4)*
- In Utah, the 2006 dentist-to-100,000 population ratio is 56.8 (Utah Population: 2,582,371[4]). *(Ref: Pg. 4)*
- Racial and ethnic mix of the dentist population in Utah is disproportionate to the racial and ethnic mix of Utahns. *(Ref: Pg. 8)*
- Only 1.6% (23) of Utah's dentist workforce is female; 19.0% (33,631) of the national dentist workforce is female[5]. *(Ref: Pg. 9)*
- With an average age of 46.5 years, the dentist workforce in Utah is younger than its national counterpart (average age 49.1 years). *(Ref: Pg. 9)*
- The self-reported average age of retirement for a Utah dentist is 65. *(Ref: Pg. 10)*
- As a result of pre-retirement reduction in practice hours, Utah might lose additional 116-134 full time equivalent dentists in the next ten years. *(Ref: Pg. 10)*
- Of the total 1,467 active provider dentists in Utah, 80.5% (1,189) are general dentists and 19.4% (285) are specialist dentists. *(Ref: Pg.12)*
- The average annual gross production and net income of active providers in Utah are $591,899 and $158,271 respectively. *(Ref: Pg.13)*
- Utah dentists spend slightly more hours per week in patient care (34.7hrs/wk) than the national average (32.1hrs/wk). *(Ref: Pg.16)*
- About 5.6% (83) of Utah dentists earn more than 20% of their gross production in the form of Medicaid dollars. *(Ref: Pg.22)*

* Active Provider Dentist is a term coined by the UMEC to represent Utah licensed dentists who reported their practice status as Active Full-Time or Part -Time service in Utah. (Ref: Appendix A)

Recommendations

The UMEC, in conjunction with the Dentist Workforce Advisory Committee, makes the following recommendations to effectively manage dental healthcare in Utah:

- Assess and meet changing market and education needs:
  - Demand study – The UMEC, in conjunction with the dental care industry in Utah, dental insurance industry in Utah, and the Utah Department of Health (DOH), should develop a system that periodically assesses demand and need for dental services in Utah
  - Supply study – The UMEC, in conjunction with the Utah DOPL and the Utah Dental Association (UDA), should conduct less comprehensive dentist workforce studies in Utah more frequently. A comprehensive dental workforce study, such as this, should be conducted once every 5 years.
  - Assess Utah dental education programs – The UMEC in conjunction with the University of Utah (U of U) should monitor the retention rates of Utah residency program graduates and dentists receiving reimbursement from the Regional Dental Education Programs (Creighton and At Large) after termination of their contracts.
- Improve access to dental care for the underserved:
  - The Utah DOH and the community at large should encourage mobile service programs like the Family Dental Plan, Community Partnered Mobile Dental Services and provide incentives to dentists participating in these programs.
  - Legislature should expand existing loan reimbursement programs that encourage dentists to practice in rural areas to encompass underserved areas and populations.
  - Legislature should work with the Utah DOH to increase Medicaid reimbursement rates. This will encourage private dentists to accept underserved population without jeopardizing their incomes.
- Racial and ethnic imbalance should be addressed. This can be done by the Area Health Education Centers (AHECs) in Utah in conjunction with the UDA and the Utah State School Board. Together, they should:
  - Promote dentistry as a career among minority jr. high/middle school students.
  - Promote awareness of the dental education and loan reimbursement programs available in Utah among the minority populations.
  - Promote coalitions between high school counselors and Utah pre-dental program directors.
- Gender imbalance in the workforce should be addressed by a coalition of the Utah DOH, the Utah AHECs and the UDA. Together, they should:
  - Study why women are under-represented in the Utah dentist workforce.
  - Promote dentistry as a career among female jr. high/middle school students.
- The Utah DOH, in conjunction with the UMEC, should develop a central data repository for Utah's health and workforce status. Together they should:
  - Design the central database such that Utah data is comparable to the available regional and national data.
  - Improve, unify and standardize data collection processes across the state.

Reference

1 American Dental Association (1983). *Strategic Plan, American Dental Association's Report of the Special Committee on the Future of dentistry, 1983*. (p.65)

2 U.S. Department of Health and Human Services (2000). *Oral Health in America: A Report of the Surgeon General.* Rockville, MD: U.S. Department of Health and Human Services, National Institute of Dental and Craniofacial Research, National Institutes of Health, 2000. (p.235)

3 Utah Code Section 63C-8-104. *Duties of the Council.* <http://le.utah.gov/~code/TITLE63C/htm/63C05005.htm> (15 Sept, 2007)

4 Utah Governor's Office of Planning and Budget (2005). *2005 Baseline Economic and Demographic Projections, Detailed Demographic and Economic Tables, 5 Year Age Groups by Area and Gender*. <http://governor.utah.gov/dea/Projections/05Baseline/5yearagegroupbyareagender.pdf>(10 Sept, 2007)

5 American Dental Association (2006). *Distribution of Dentists in the United States by Region and State, 2005* (Table 2)

Utah's Dentist Workforce 2006:
A Study of Workforce Trends and Capacity to Provide Service

Introduction & Background

Dentist workforce status in the nation has gone from oversupply in 1983[1] to a projected undersupply by the year 2020[2]. Given the national trend of decreasing dentist-to-population ratios, the Utah Medical Education Council (UMEC) saw the need to assess Utah's dentist workforce.

In December 2002, the UMEC compiled and published a dentist workforce profile. The profile was developed based on data collected from various existing sources. According to this profile, Utah had a dentist-to-100,000 population ratio of 61.4 in 2002 and projected a decline in dentist supply by the year 2009. A complete list of the major findings from the 2002 profile is provided in Appendix C of this report.

The 2002 profile was the first overview of Utah's dentist workforce that provided valuable information – such as demand for dentists in Utah, dentist participation in Medicaid, dentist retirement activity etc., in one place. However, the data provided in the profile were collected at different, but close, time periods by various organizations. Also, the profile provided limited information on dentist demographics and their practice characteristics. The current Utah dentist workforce assessment will help assess the projections made by the 2002 profile and update it with more accurate and detailed information.

Methodology

The Utah dentist workforce data used for this report has been collected using a survey (*Ref: Appendix B*) designed and conducted by the UMEC. The survey instrument was a questionnaire with pre-structured response categories; and is referred to as the "UMEC 2006 Dentist Workforce Survey". Microsoft (MS) Access, MS Excel and SPSS (formerly Statistical Package for the Social Sciences) software were used to process and analyze the data.

The questionnaire was mailed to 2,158 dentists with an active license in Utah as of May 1, 2006. The list of licensees was provided by the Utah Division of Occupational and Professional Licensing (DOPL). The United States Postal Service (USPS) forwarded surveys to those dentists who have moved but whose addresses were not updated with the Utah DOPL; and these addresses were updated in the UMEC database. A follow-up questionnaire was mailed to non-respondents after a three-month interval. A total of 1,409 dentists responded to the survey, giving a 65.3% response rate. Data have been weighted to account for the 749 missing respondents, resulting in a weighting factor of 1.53. All data presented in the report are weighted unless otherwise specified. The number or proportion of the item non-respondents (survey respondents who did not answer a particular item in the survey) has been reported where applicable.

Scope and Limitations of the Report

Data collected from the survey specifically address the make-up of the dentist workforce in Utah – its distribution, characteristics and perceptions. Demand and supply of the dentist workforce are assessed based on available resources i.e., the population growth estimates provided by the Utah Governor's Office of Planning and Budget (GOPB), the American Dental Education Association's (ADEA's) data on the number of applicants to dental schools from Utah, American Dental Association's (ADA's) estimates of new dentists entering Utah workforce, malpractice insurance policy cancellation and issue data provided by the Professional Insurance Exchange (PIE), the 2006 dentist cohort information and dentist retirement data collected using the UMEC 2006 Dentist Workforce Survey instrument and the licensing data provided by the Utah DOPL. The UMEC projects future trends of the dentist workforce in Utah using demand and supply models based on the aforementioned data.

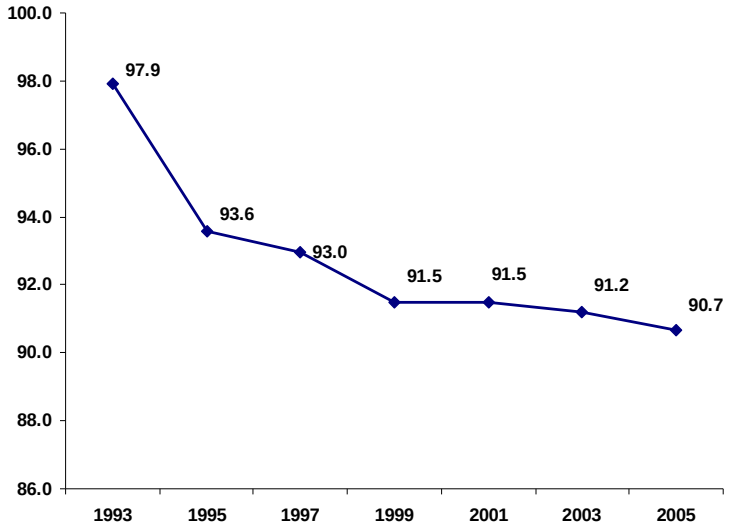
Limitations:

- State level benchmarks: Absence of state level benchmarks to compare with the survey data resulted in an uncertainty about the adequacy of the available dentist workforce to meet the needs of the state.
- National level comparison data: National level data for the dentists' average annual gross and net income, practice hours, patient wait time and other practice characteristic data are not available for comparison with the UMEC data.
    - Neither the U.S. Department of Labor: Bureau of Labor Statistics' (BLS) occupational employment and wages data nor the ADA report the average annual gross income and average annual net income for all professionally active dentists.
    - The ADA reports practice characteristic data for the independent dentist category, which are not comparable to the UMEC survey data.
    - The average wait time, in days, before a patient can get an appointment to see the dentist is reported separately for new and established patients by the ADA. The UMEC on the other hand, did not collect this information separately for new and established patients.
- Gender based data: The proportion of female dentists in Utah is very small (1.6% or 23 of 1,467). To avoid compromising personal information of individual dentists, gender based aggregate data are not reported.
- Ambiguous Data:
    - Question # 20 of the survey instrument elicited the total number of auxiliary dental workforce and the total auxiliary workforce hours per week by category (hygienists, administrative and dental assistants). The responses however, could include hours per week per auxiliary instead of the total auxiliary hours per week by category.
    - The term 'Fee for Service Patients' in question # 28 of the survey instrument was intended to refer to uninsured patients.
    - The term "Charity" is not defined in question # 33 of the survey instrument. As such, respondents could have reported bad debt write-offs as charity.

Current Utah Dentist Workforce

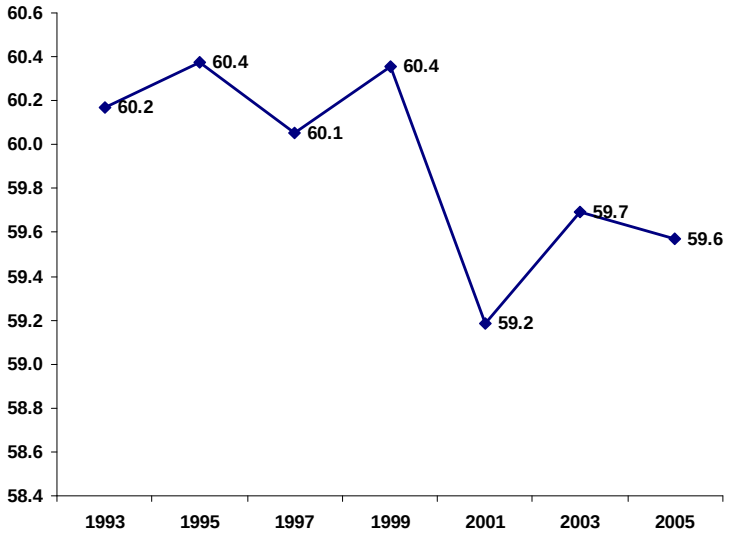
Utah DOPL dentist license data indicate a trend of declining dentist licensee-to-100,000 population ratio in Utah since 1993, suggesting that Utah's workforce may be thinning.

Figure 1: Utah DOPL Dentist License-to-100,000 Population Ratio Trend



Note: Figure 1 expresses all dentists who maintain a license in Utah as a ratio of Utah population. Many of these dentists do not live/provide services in Utah. Figure 2 expresses all the professionally active dentists in the U.S. as a ratio of U.S. population.

Figure 2: National Professionally Active Dentist-to-100,000 Population Ratio Trend



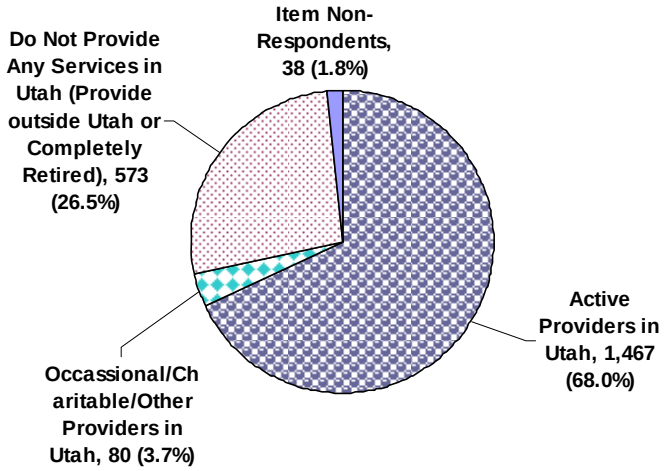
In addition to this decline, not all Utah licensed dentists practice in Utah. If the projected national shortage occurs[2], states across the nation will try to attract and retain the workforce. Utah's reliance on the national dental schools for educating its workforce and its lower average pay (ranked 40th in the nation, Utah GOPB 2008 Economic Summary) may intensify this thinning of the workforce trend.

Current Workforce Supply

Only 1,467 (68.0%) of the 2,158 licensed dentists in Utah provide services in Utah and are referred to as 'Active Providers'. Of the 1,467 active providers in Utah, 1,363 (92.9%) dentists are active full-time providers and 104 (7.1%) dentists are active part-time providers.

Of the remaining 691 licensed dentists, 573 (82.9%) dentists do not provide any services in Utah or are completely retired. About 13.0% (90) of the remaining include occasional providers in Utah[†]; dentists who are retired and provide only voluntary/charitable services in Utah; and dentists who reported their practice status as 'other' in the questionnaire.

Figure 3: Distribution of Dentist Workforce in Utah by their Practice and Service Provision Patterns-UMEC, 2006



Dentist-to-100,000 Population Ratio

Utah has an active dentist-to-100,000 population ratio of **56.8** (1,467 dentists; population of Utah as on July 1, 2006: 2,582,371[3])[‡]. Utah has a higher active dentist-to-100,000 population ratio than the mountain region (55.7 dentists per 100,000 population[4]); and a lower ratio than the nation (59.8 dentists per 100,000 population[4]).

The number of dentists reported by various sources might differ from the UMEC based on the methodology used. Nevertheless, almost all sources indicate a declining trend in the dentist-to-100,000 population ratio since 2002. This trend is also verified in Table 1.

[†] Occasional Providers are providers who practice elsewhere, but occasionally visit Utah and provide services.
‡ Statistical estimation shows that with a 99.0% confidence level, the number of dentists practicing in Utah should lie between 1,443 and 1,491. This translates to a dentists-to-100,000 population ratio range of 55.9-57.8.

Figure 4: Dentist-to-100,000 Population Ratio Comparison: Utah vs. Mountain Region and U.S.A.

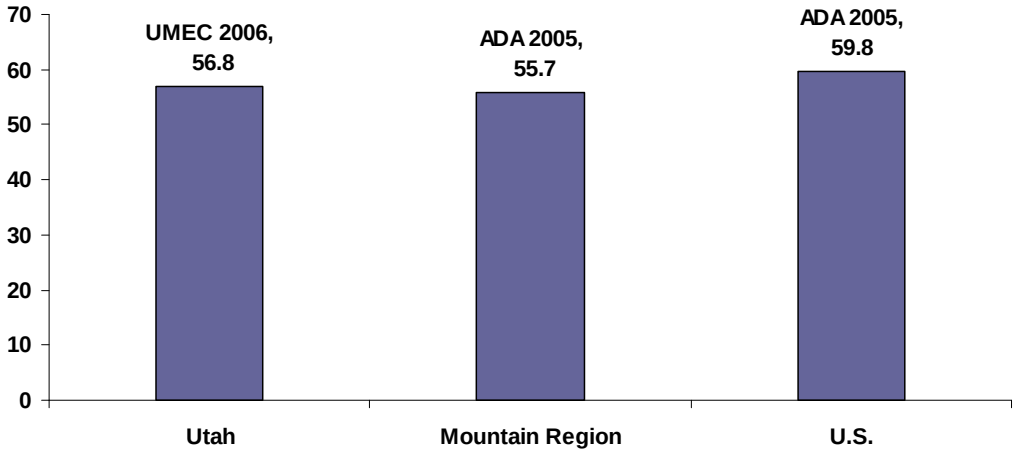


Table 1: Change in Number of Dentists in Utah, 2002-2006

Dentist Workforce Data Source	2002			2006		
	Year	Estimated Total Dentists	Ratio per 100,000 Population	Year	Estimated Total Dentists	Ratio per 100,000 Population
UMEC (Utah)	Same As UDA Data			**2006**	1,467	56.8***
UDA (Utah)	**2002**	1,417	61.7	**2006**	1,517	58.7
PIE (Utah)*	**2001**	1,114	50.9	**2006**	1,291	50.0
Utah DOPL (Utah)**	**2001**	2,109	96.4	**2006**	2,158	83.6

*PIE insures about 90% of dentists practicing in Utah.
**Not all Utah DOPL licensees practice in Utah.
*** Utah Population, 2006 – 2,582,371

It should be noted that a decline in the dentist-to-100,000 population ratio does not imply that the community is losing dentists. However, it does indicate that the current number of dentists is declining with respect to the increasing population in the area. In other words, the dentist workforce in Utah is thinning.

The dentist-to-population ratio does not address factors like dentist productivity, practice methods, auxiliaries employed and the accessibility of dentists to the populations in need. However, it is widely used as a unit to measure the workforce due to its simplicity and comparability across the nation.

Geographic Distribution of Dentists in Utah

Access to dental care is an issue for low income populations across Utah. The Bureau of Health Professions (BHPr) identifies that about 6.5% (167,733) of Utah's population is low income population living in the low income dental Health Profession Shortage Areas (HPSAs). Geographic maldistribution on the other hand, is not an issue that can be identified at the macro level. However, pockets of geographic maldistribution were identified in Utah by the UMEC and the BHPr – about 1.7% (44,580) of Utah's population resides in counties designated as geographic dental HPSAs.

BHPr designates dental HPSAs based upon the criteria set forth under Section 332 of the Public Health Service Act (November 17, 1980, Federal Register). Entities in these areas are eligible to apply for assignment of National Health Service Corps personnel and are eligible service areas for certain loan repayment, scholarship, and other Public Health Service Programs[5].

In 2002 all 29 counties in Utah were designated as geographic or low income dental HPSAs. In 2006, the number of counties designated as such reduced to 21 – four counties were classified as geographic dental HPSAs and 17 counties were classified as low income dental HPSAs. Although there is an improvement since 2002, it seems marginal due to the fact that many counties that surround the dental HPSA designated counties qualify for the BHPR's definition of over-utilization of dentists[§,6].

According to the UMEC data, 74.8% (1,097) of the workforce practices in the urban counties where 75.6% (1,953,169) of the population lives – suggesting a proportionate distribution of population and dentists. However, 18 of Utah's 29 counties have dentist-to-100,000 population ratios below the state's average of 56.8. Four of these 18 counties: Grand, Iron, Piute and Tooele, have dentist-to-100,000 population ratios less than half of the state's average of 56.8 dentists-per-100,000 people. 4.0% (103,295) of Utah's population resides in these counties.

It should be noted that the counties are identified as geographically underserved by the UMEC due to the low dentist-to-100,000 population ratios. The practice patterns and exact locations of practice or populations are not considered while identifying these counties. The HPSA designation however, is based on Full Time Equivalents (FTEs) of dentists and auxiliary dental workforce along with a variety of factors like travel time, terrain, income and other socio-economic factors that govern utilization patterns of the population in each county. These factors account for different counties being identified for by the BHPr and the UMEC. A complete list of 2006 HPSA designations for Utah counties is provided in Table 2.

[§] *"Dental professional(s) in areas contiguous to an area being considered for designation will be considered excessively distant, overutilized or inaccessible to the population of the area under consideration if one of the following conditions prevails in each contiguous area:"… "(b) contiguous area population-to-(FTE) dentist ratios are in excess of 3000:1, indicating that resources in contiguous areas cannot be expected to help alleviate the shortage situation in the area being considered for designation."…* - BHPr, HPSA Designation Criteria (http://bhpr.hrsa.gov/shortage/hpsacritdental.htm)

Table 2: HPSA Designations for Utah Counties, 2006

Geographic Area, full-county	Geographic Area, partial-county
Dagget	Summit
Garfield	
Piute	
Low-income Population, full-county	**Low-income Population, partial-county**
Beaver	Davis
Duchesne	Salt Lake
Emery	Weber
Rich	
Iron	**Undesignated**
Juab	Box Elder
Kane	Cache
Millard	Carbon
Morgan	Grand
San Juan	Tooele
Sanpete	Wasatch
Sevier	Washington
Uintah	Wayne
Utah	

Source: Utah Office of Primary Care and Rural Health Services

Summary

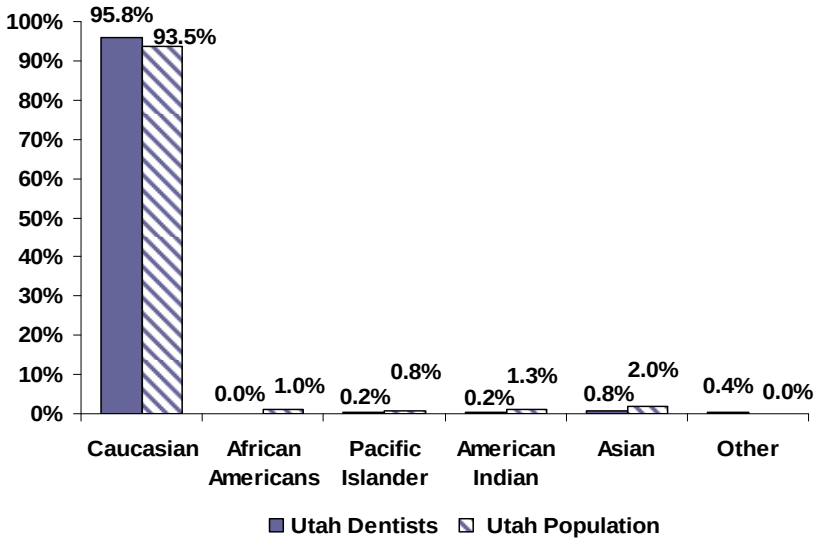
- As of 2006, there are 1,467 active provider dentists, including 1,363 (92.9%) active full-time practitioners and 104 (7.1%) active part-time practitioners, in Utah.
- In Utah, the 2006 dentist-to-100,000 population ratio is 56.8 (Utah Population: 2,582,371).
- The dentist-to-100,000 population ratio in Utah has declined since 2002 – from 61.7 in 2002[7] to 56.8 in 2006.
    - This trend is also supported by the UDA data – from 61.7 in 2002 to 58.7 in 2006.
- About 74.8% (1,097) of the workforce practices in the urban counties where 75.6% (1,953,169) of the population lives suggesting an absence of maldistribution issue at the macro level.
    - Counties have been identified where 1.7% (44,580) to 4.0% (103,295) of Utahns either have dentist-to-100,000 population ratios less than half the state average or live in designated Geographic Dental HPSAs.
    - About 6.5% (167,733) of Utahn's are low income people residing in counties designated as low income dental HPSAs.

Workforce Demographics

Race and Ethnicity

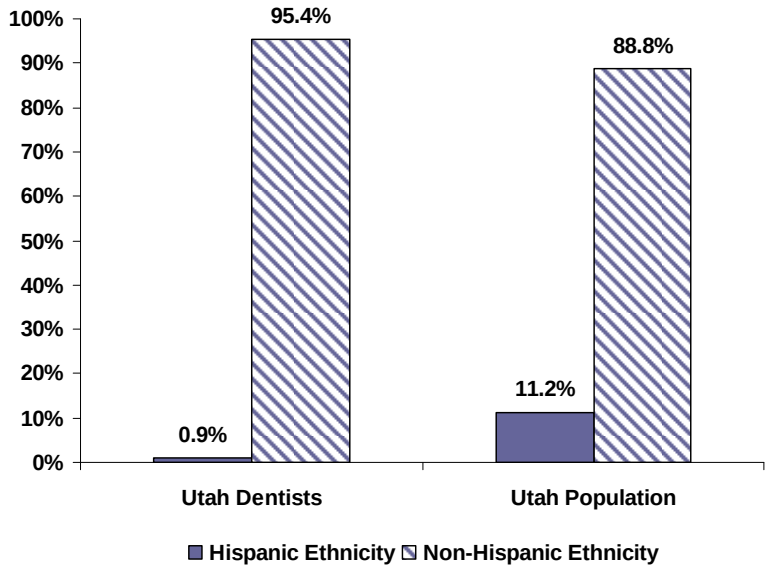
Dentist workforce in Utah does not reflect the diversity of Utah's population. Only 1.7% (25) dentists in Utah belong to races other than Caucasian compared to 5.1% (130,053) of the 2006 Utah population estimate[8].

Figure 5: Race – Utah Dentists Vs. Utah Population, UMEC 2006



The ethnic mix of the Utah population is also different from that of the Utah dentist workforce. While 11.2% (285,607) of Utah's 2006 population estimate is of Hispanic ethnicity[8], only 0.9% (14) of Utah's dentist workforce is Hispanic. While the dentist workforce in Utah remained mostly Caucasian, Utah population continues to diversify ever since the late 80's[9,10].

Figure 6: Hispanic Ethnicity – Utah Dentists vs. Utah Population, UMEC 2006

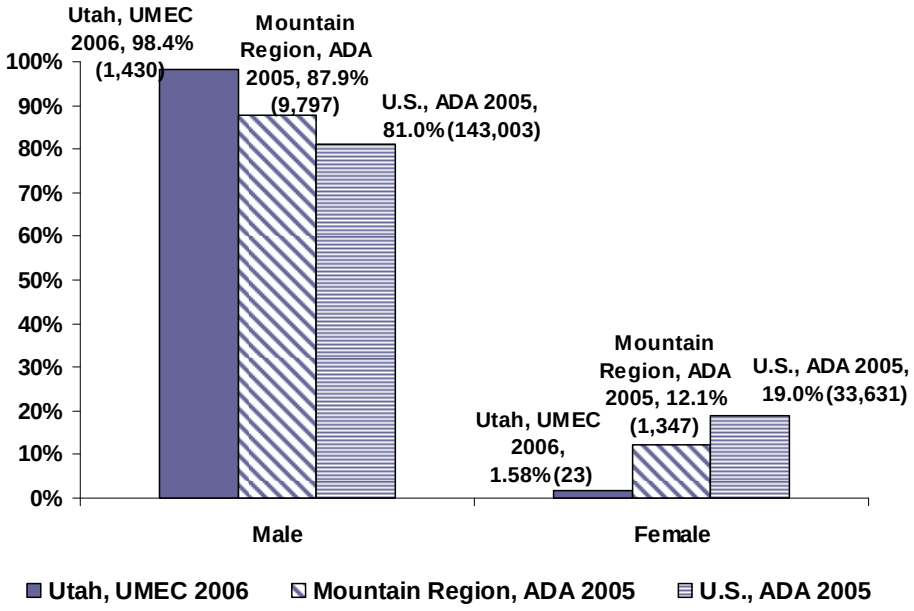


Research indicates that minority patients tend to receive better interpersonal care, greater medical comprehension and exhibit a greater likelihood of keeping follow-up appointments when served by a practitioner of their own race or ethnicity. Further more, minority health professionals disproportionately serve minority and other medically underserved populations[11]. These conclusions are backed by research specific to dentists in *Provision of Care to the Underserved Populations by National Health Service Corps Alumni Dentists*, by Mofidi et al[12]. Given this outlook and the fact that the minority populations are growing at a rapid rate in the state, it is important that Utah focuses on diversifying its workforce.

Gender

Utah has a disproportionately small percentage of females in its dentist workforce. About 1.6% (23) of Utah's dentist workforce is female compared to 12.1% of the mountain region dentist workforce and 19.0% of the national dentist workforce[13].

Figure 7: Dentist Gender Distribution

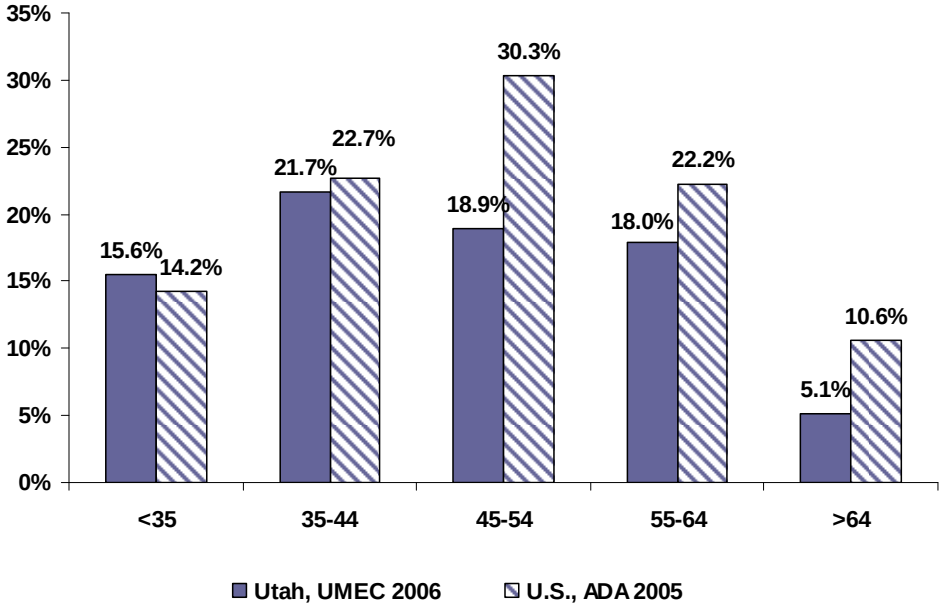


The increase in the percentage of female dental school graduates nationwide, from 36.4% in 1996 to 43.8% in 2005[14], has the potential to improve female representation of the dentist workforce in Utah. Because of the small representation of female dentists in Utah's dentist workforce, this study does not publish any further gender specific demographics and practice characteristics.

Age

The dentist workforce in Utah is younger than that of the nation. Survey data indicate that the average age of all active providers in Utah is 46.5 years (median age: 46.0). According to the ADA, the average age of all dentists in Utah is 48.0 years; mountain region is 48.4 years; and the nation is 49.1 years[15]. Figure 8 shows the age distribution of active provider dentists in Utah as compared to the professionally active dentists in the nation.

Figure 8: Age Distribution of Dentists – Utah, UMEC 2006 vs. U.S.A., ADA 2005



About 37.3% (547) of the active providers in Utah are below 45 years of age compared to the 36.9% across the nation. This is an indicator of workforce availability for, at the least, the next twenty years. About 23.1% (339) of the workforce is over the age of 54.

Retirement

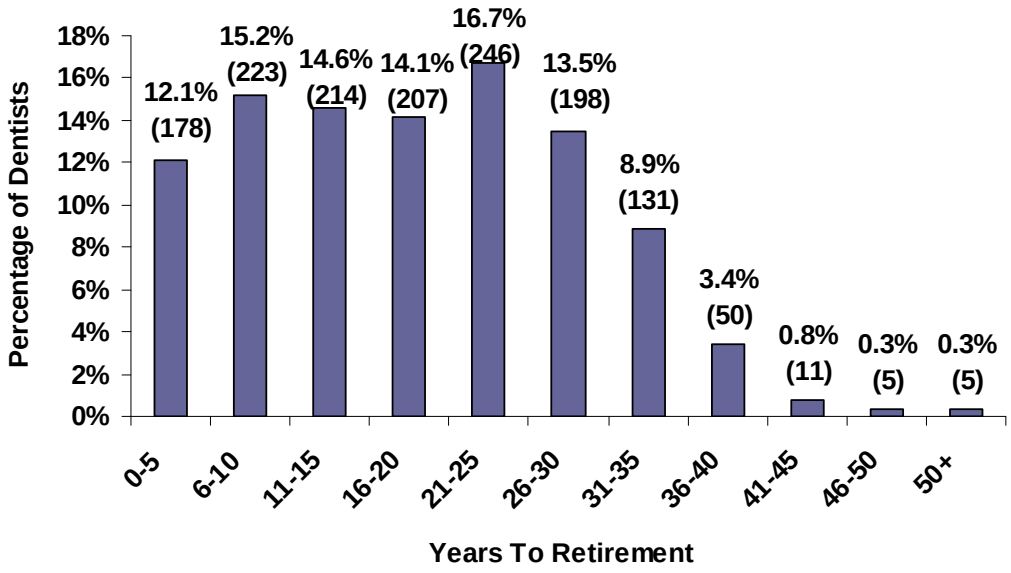
The average age of retirement of a Utah dentist is 65. About 27.3% (401) of Utah's dentist workforce is planning to retire over the next 11 years (2006-2016). This translates to about 36 dentists per year. This information is based on the self-reported retirement age of Utah dentists**.

Reducing their practice hours before taking complete retirement is a common practice among dentists and has not been quantified previously. About 602 (41.0%) dentists reported that in the next ten years, pre-retirement reduction in hours is one of their planned professional changes. A loss of 116-134 full time dentists in the next ten years was recognized, when an appropriate reduction factor†† is applied to their (dentists who reported pre-retirement reduction in hours) current practice hours.

** A question here is whether the dentists actually retire according to their plans. The retirement information for dentists can be validated only by updating the current data periodically and conducting a comparative analysis. However UMEC studies between 1998 and 2003 established that physicians did retire according to their plans.

†† Considering dentists who reported that they will have a pre-retirement reduction in their hours over the next ten years as 100%, the UMEC model assumes that 25% (oldest of this 100%) will cut their hours by 75% and the remaining 75% will cut their hours by 25%.

Figure 9: Years to Retirement for Utah Dentists, UMEC 2006



Summary

- Racial and ethnic mix of the dentist population in Utah is disproportionate to the racial and ethnic mix of Utahns.
  - Less than 1.0% (14) of Utah's dentist workforce is of Hispanic ethnicity compared to 11.2% (285,607) of the 2006 Utah population estimate.
  - 1.7% (25) dentists in Utah belong to races other than Caucasian compared to 5.1% (130,053) of the 2006 Utah population estimate.
- Only 1.6% (23) of Utah's dentist workforce is female; 19.0% (33,631) of the national dentist workforce is female.
- The dentist workforce in Utah is younger than its national counterpart.
  - The average age of a Utah dentist is 46.5 years (median age: 46.0 years) compared to 48.0 years in the mountain region and 49.1 years in the nation.
  - About 15.6% (228) of Utah dentists are under age 35, 40.6% (596) are between the ages of 35-54, and 23.1% (338) are age 55+.
- The self-reported average age of retirement for a Utah dentist is 65.
- Utah will lose about 36 dentists per year over the next decade due to retirement.
- As a result of pre-retirement reduction in practice hours, Utah might lose 116-134 full time equivalent dentists in the next ten years.

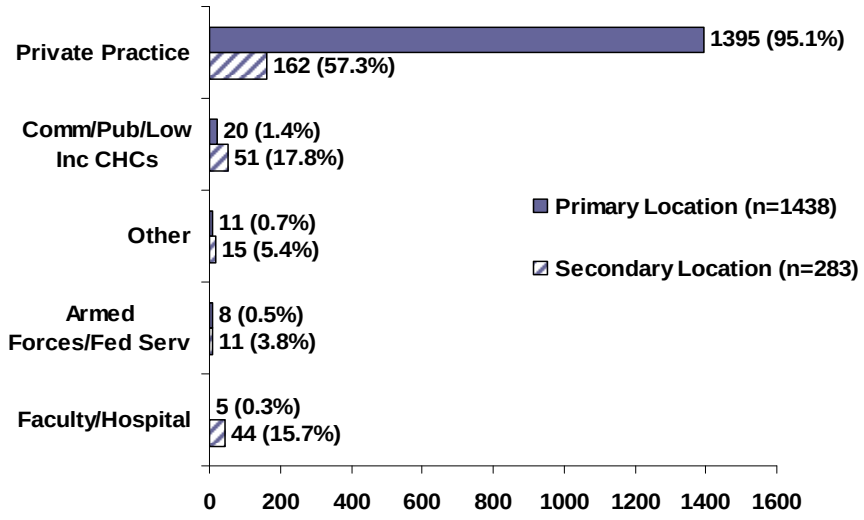
Practice Characteristics

Type and Location of Practice

About 19.3% (283) of Utah dentists practice in more than one location. The dentists in the UMEC survey classified their practice locations as primary and secondary based on the number of hours they spend in each practice location. About 95.1% (1,395) of the active providers in Utah reported private practice as their primary practice.

Only 1.4% (20) of the dentists reported their primary practice location as a community health center, a low income health center or a public health center. About 17.8% (50) of the dentists who work in more than one location reported community health center, a low income health center or a public health center as a secondary practice location.

Figure 10: Dentist Practice Settings – Primary and Secondary, UMEC 2006



Specialization

About 19.4% (285) of Utah's dentist workforce works in one of the recognized specialties of dentistry. This is comparable to the mountain region's 20.2% and the nation's 21.2% specialist dentist population[16].

Table 3 compares the distribution of these dentists by specialty. None of the dentists reported specialization in public health dentistry. However, 6.5% (95) dentists reported public health dentistry within the scope of their practice.

Table 3: Specialist Workforce – Utah, U.S and Mountain Region

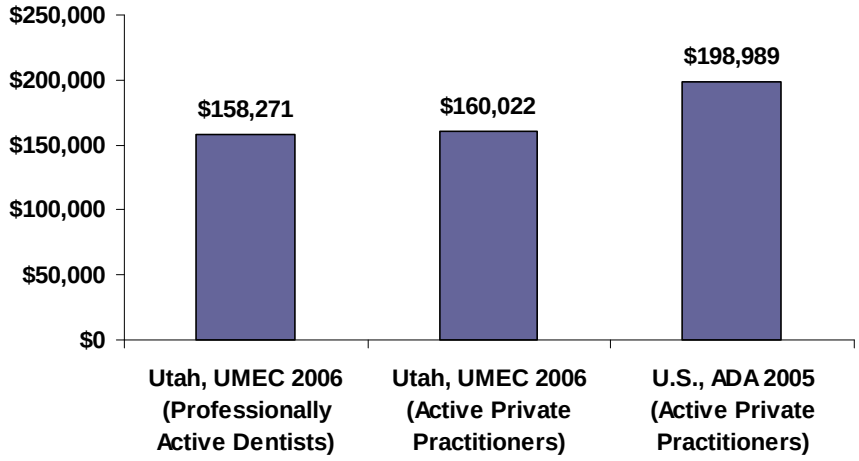
Specialty	UMEC 2006		ADA 2005					
	Utah		Utah		Mountain Region		U.S.	
General Dentsits	**1,182**	**80.6%**	**1,307**	**80.7%**	**8,882**	**79.8%**	**138,918**	**78.8%**
Total Specialists	**285**	**19.4%**	**313**	**19.3%**	**2,254**	**20.2%**	**37,313**	**21.2%**
Endodontics	*35*	*12.4%*	*35*	*11.2%*	*274*	*12.2%*	*4,547*	*12.2%*
Pediatric Dentistry	*67*	*23.7%*	*58*	*18.5%*	*357*	*15.8%*	*5,330*	*14.3%*
Periodontics	*17*	*5.9%*	*22*	*7.0%*	*275*	*12.2%*	*5,224*	*14.0%*
Prosthodontics	*9*	*3.2%*	*14*	*4.5%*	*149*	*6.6%*	*3,427*	*9.2%*
Public Health	*0*	*0.0%*	*7*	*2.2%*	*147*	*6.5%*	*1,336*	*3.6%*
Orthodontics,Dentofacial & Orthopedics	*103*	*36.0%*	*132*	*42.2%*	*665*	*29.5%*	*10,028*	*26.9%*
Oral & Maxillofacial Surgery	*46*	*16.1%*	*44*	*14.1%*	*378*	*16.8%*	*6,907*	*18.5%*
Other	*8*	*2.7%*	*1*	*0.3%*	*9*	*0.4%*	*514*	*1.4%*

Gross Production & Net Income

The average annual gross production of an active provider in Utah is $591,899, while the average annual net income of a Utah active provider is $158,271. Income data from the UMEC survey do not distinguish between group practice and private practice; or between the status of a dentist – owner, employee or contractor.

The average annual net income for all active private practitioners in the nation is $198,989‡‡. This amount is $160,022 for all active private practitioners in Utah.

Figure 11: Dentist Average Annual Net Income – Utah 2006 vs. U.S.A.2005



‡‡ The ADA only reports the national average net income data for categories of dentists distinguished by practice and ownership status instead of all active practitioners. Therefore this data had to be computed based on information published by ADA for each category.

Figure 12: Utah Dentist Annual Net Income- General vs. Specialist Dentists, UMEC 2006

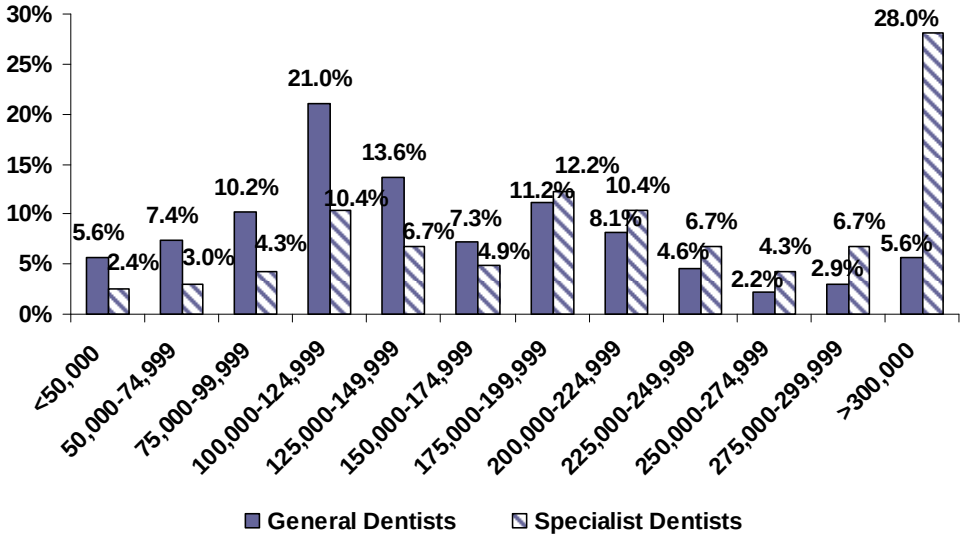


Figure 13 below provides the breakdown of the average annual gross production and the average annual net compensation of Utah dentist workforce for general dentists and specialist dentists.

Figure 13: Dentist Average Annual Gross Production & Net Income – General vs. Specialist Dentists, UMEC 2006

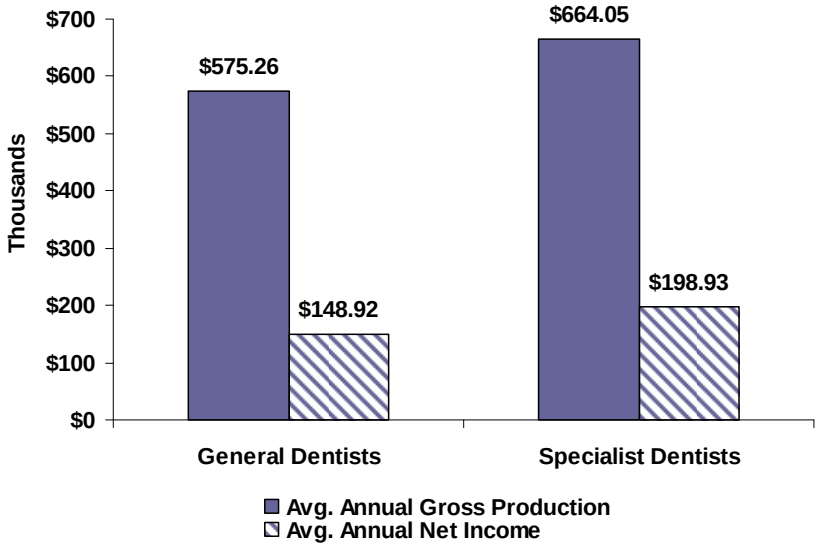


Figure 14: Dentist Average Annual Gross Production & Net Income – By Age Group, UMEC 2006

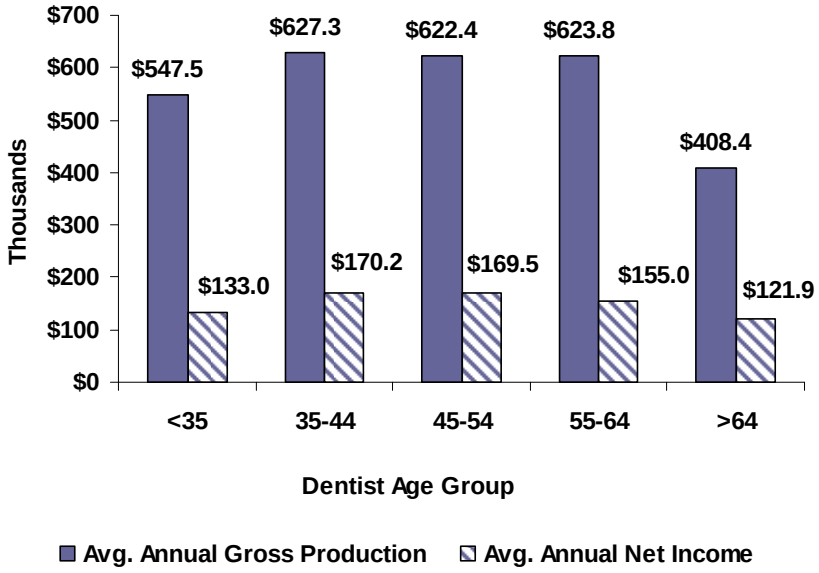
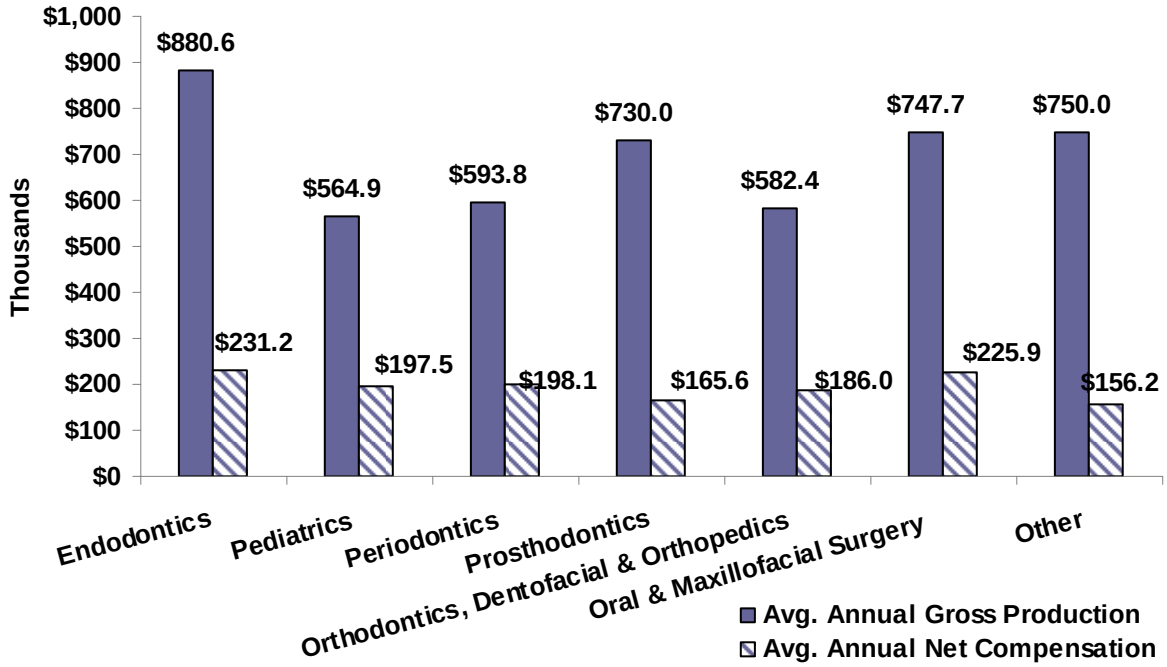


Figure 15: Dentist Average Annual Gross Production & Net Income – By Specialty, UMEC 2006



Practice Hours

The practice hours and patient wait time for dentist appointment data suggest that dentists in Utah are as busy as the dentists across the nation. On average, active providers in Utah spend 34.7hrs/week in patient care and 35.8hrs/wk in their office (this includes both their primary and secondary practice locations)[§§]. The ADA reports 32.1hrs/wk and 35.8hrs/wk in patient care and dental office respectively for independent dentists in the nation[17].

Figure 16: Dentist Patient Care and Office Hours per Week – Utah 2006 vs. U.S.A. 2005

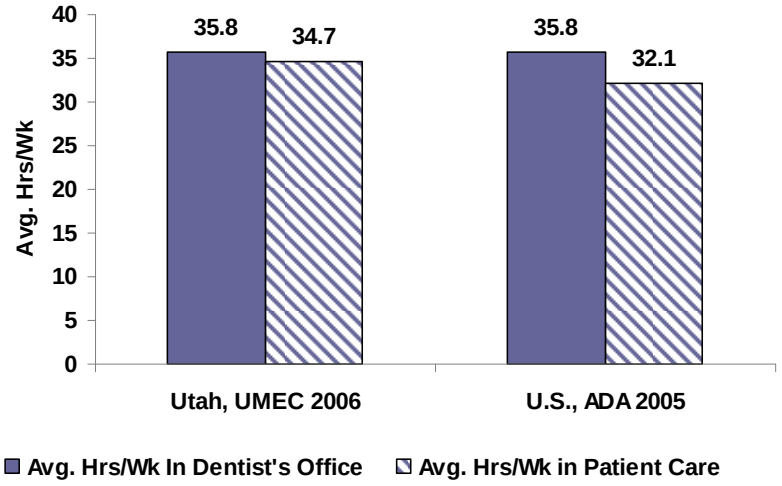
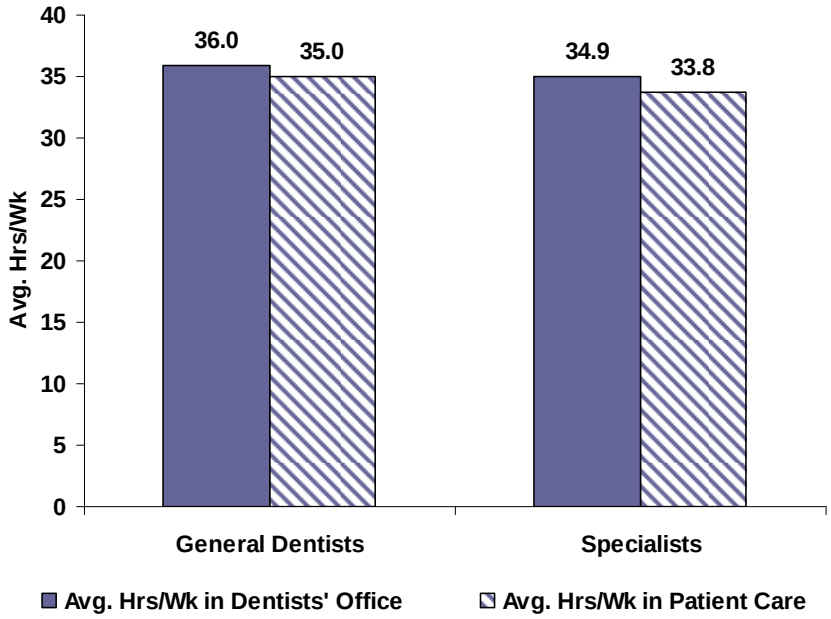


Figure 17: Dentist Office & Patient Care Hours – General & Specialist Dentists, Utah 2006



§§ The hours spent in administration were not asked for in the survey – only patient care hours, research and teaching hours were asked. The dentists' office hours average is reported based on the hours spent in primary location.

Figure 18: Dentist Office and Patient Care Hours – By Age Group, Utah 2006

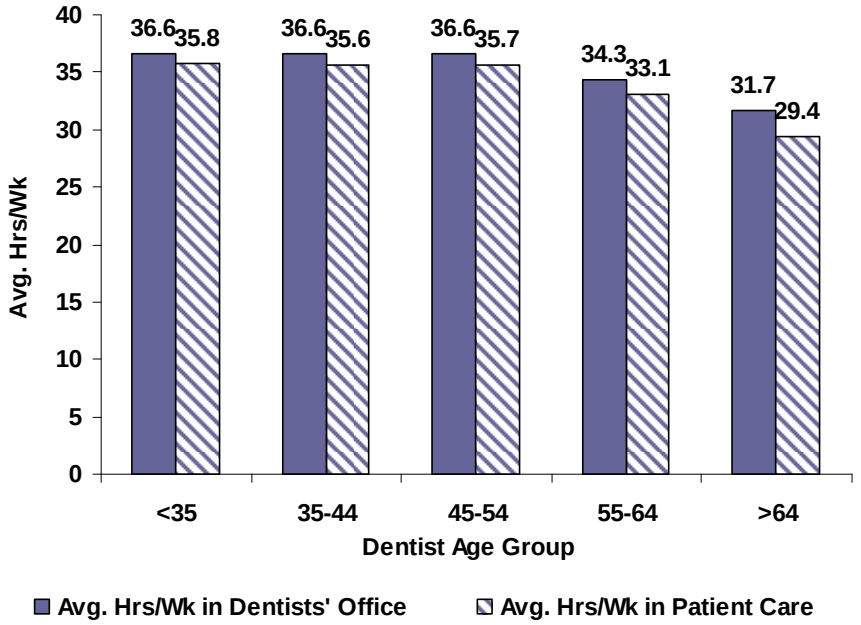


Table 4: Utah Specialist Workforce Practice Hours – Dentist's Office vs. Patient Care, UMEC 2006

Specialty	Avg. Dentist Office Hrs/Wk	Avg. Patient Care Hrs/Wk
General Dentists	35.9	34.9
Endodontics	37.6	37.4
Pediatrics	33.4	33.7
Periodontics	42.3	37.1
Prosthodontics	38.2	24.5
Orthodontics, Dentofacial & Orthopedics	32.7	31.1
Oral & Maxillofacial Surgery	37.3	38.4
Other	33.8	29.6

Patient wait time to schedule an appointment with the dentist is another indicator of dentist workload. The ADA reports these data for independent dentists separately for new patients and for patients of record[18]. UMEC did not distinguish between new patients and patients of record.

Figure 19: Average Patient Waiting Time in Days for Scheduled Appointment – Utah 2006 vs. U.S.A. 2005

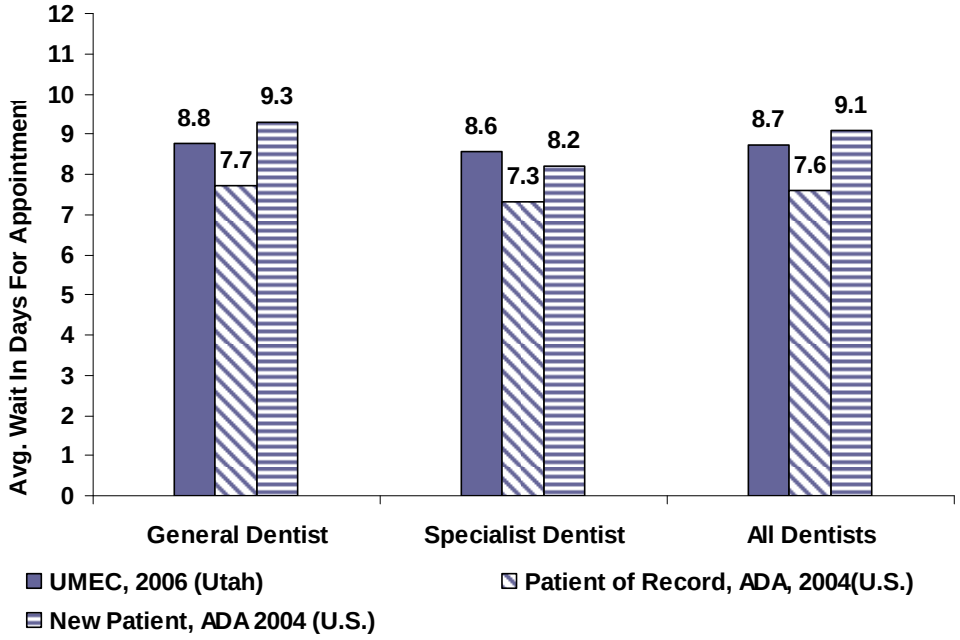
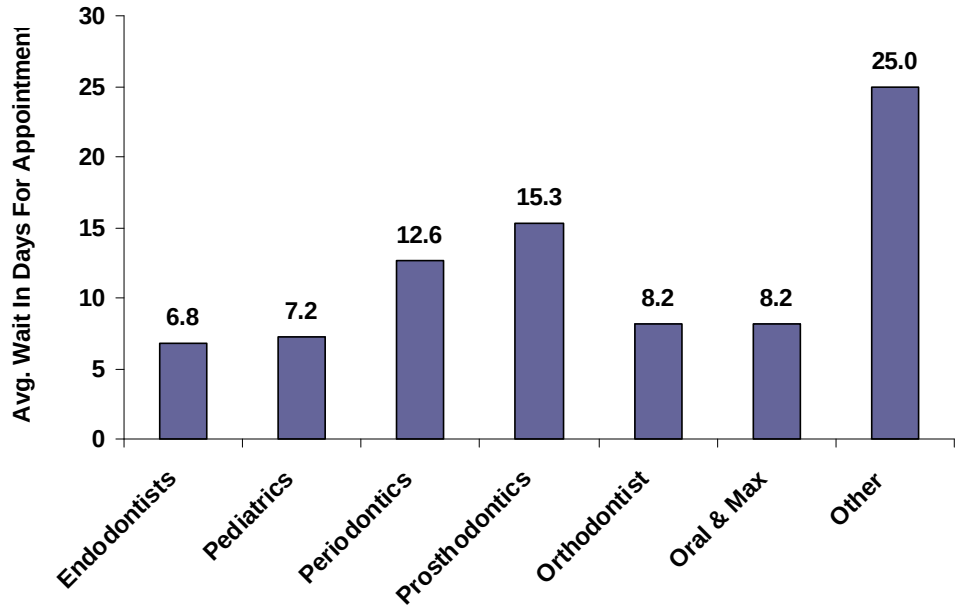


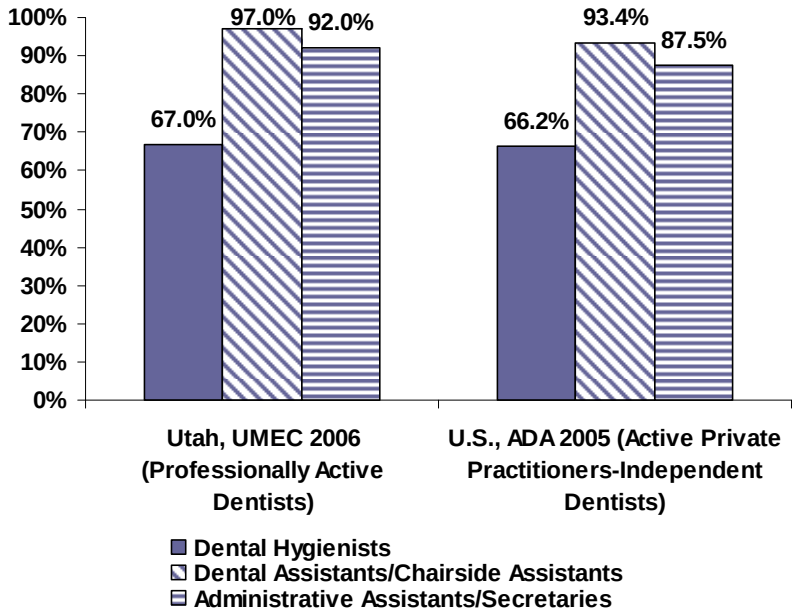
Figure 20: Average Utah Patient Waiting Time in Days for Scheduled Appointment – By Specialty, Utah 2006



Allied Dental Workforce

Allied or auxiliary dental workforce – dental hygienists and dental assistants, play a major role in the dentist workforce productivity. About 95.9% (1,408) of Utah's dentist workforce employs one or more dental assistants; about 57.8% (848) employs one or more dental hygienists; and about 91.1% (1,337) employs one or more administrative assistants.

Figure 21: Percentage Dentists Employing Auxiliaries – Utah vs. U.S.A.



Source: ADA, 2005 Survey of Dental Practice, Employment of Dental Practice Personnel, Pg. # 6

According to Dr. Charles Blair, a contributing editor to the Tax Column for Dental Economics magazine, a full time hygienist is needed to support about $400,000 of gross production. Given that the average annual gross production of an active provider in Utah is $591,899, on average each dentist has to employ at least one full-time dental hygienist to maintain a viable and stable practice.

Confirming this estimate, with an average annual gross production of $591,899, a Utah dentist employs 1.5 dental hygienists – each working part-time (21hrs/wk). These data indicate that Utah dentist workforce relies on the auxiliary dental workforce to sustain current level of service production.

In addition to the 1.5 part-time dental hygienists, the dentists also employ an average of 2.8 dental assistants – each working 20hrs/wk; and 1.9 administrative assistants – each working 26hrs/wk[***].

*** The respondents were asked to report the total number of dental assistants, hygienists and administrative assistants and their total work hours in their primary practice location.

Summary

- 95.1% (1,395) of Utah's dentist workforce is in private practice.
- Of the total 1,467 active provider dentists in Utah, 80.5% (1,189) are general dentists and 19.4% (285) are specialist dentists
    - Endodontics-35; Pediatric Dentistry-67; Periodontics-17; Prosthodontics-9; Public Health Dentistry-0; Orthodontics, Dentofacial and Orthopedics-103; Oral and Maxillofacial Surgery-46; Other-8).
- The average annual gross production of an active provider in Utah is $591,899.
- The average annual net income of a Utah active provider is $158,271 and that of an active private practitioner in Utah is $160,022. Using the number of dentists in these categories reported by the ADA, UMEC computed the average annual net income for all the active private practitioners in the U.S. as $198,989.
- A Utah dentist appears to be as busy as a dentist across the United States.
    - While an active provider in Utah spends an average of 34.7hrs/week in patient care the ADA reports 32.1hrs/wk in patient care for independent dentists in the nation.
    - Active provider dentists in Utah have an average wait time of 8.7 days before a patient can get an appointment to see the dentist. According to the ADA, in 2004, independent dentists in the nation had an average wait time of 7.6 days before an established patient can get an appointment to see the dentist and 9.1 days for new patients.
- Allied Dental Workforce:
    - Dental Assistants
        - 95.9% (1,408) of Utah dentists employ one or more dental assistants
        - On average, a Utah dentist employs 2.8 assistants, each working 20hrs/wk
    - Dental Hygienists
        - 57.8% (848) of Utah dentists employ one or more dental hygienists
        - On average, a Utah dentist employs 1.5 hygienists, each working 21hrs/wk
    - Administrative Assistants
        - 91.1% (1,337) employ one or more administrative assistants
        - On average, a Utah dentist employs 1.9 administrative assistants, each working 26hrs/wk.

Patient Demographics

Patient Age Groups

Focus on preventive care resulted in the American Association of Pediatric Dentists (AAPD) and the Utah DOH promoting the recommended age for the first dental visit in Utah as age one[19,20]. Given the high birthrate in Utah (20,000 births per 100,000 population[21]), this change in guideline may impact demand for dentists and pediatric dentists in Utah.

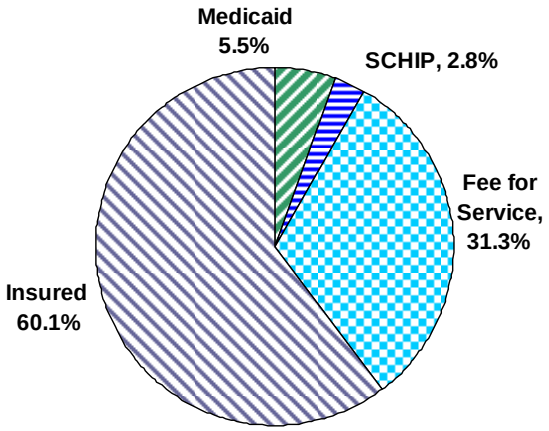
Currently, a majority of Utah dentists see children for the first time when the children are two to three years old[22]. The UMEC data further indicate that 61.3% (899) of Utah dentists do not see patients less than a year old. For the remaining 38.7% (568) dentists' who accept patients less than a year old, less than 2.0% of their patients are infants (less than a year old). About 97.0% (65) of the pediatric dentists accept patients less than a year old, while the percentage of patients in this age group visiting a pediatric dentist ranges between 1.0-15.0% with an average of 5.0% for a pediatric dentist.

On the other end of the age spectrum, geriatric dental care is taking the center stage despite the fact that geriatric dentistry is not a recognized specialty. With the advancements in dental care, an increasing number of senior citizens are retaining more of their teeth – only 13.6% of Utah population aged 65 or over have lost all their teeth[23]. In it's "2005 Facts about States", the ADA reports that Utah's population above 65 years old is expected to almost double by 2025. In Utah, about 45.1% (533) of the general dentists and 55.5% (5) of the prosthodontists have reported that geriatric care is within their scope of practice. Whether geriatric care will appeal to more dentists in Utah in the near future or not is a trend to watch.

Patient Payment Categories

Accessibility of patients with public dental insurance or no insurance to dentists is a prevailing issue. Utah dentists reported that on average, 60.1% of their gross annual production comes from insured patients; about 5.5% comes from Medicaid patients; 2.8% comes from State Children's Health Insurance Program (SCHIP) patients and 31.3% from fee for service patients†††.

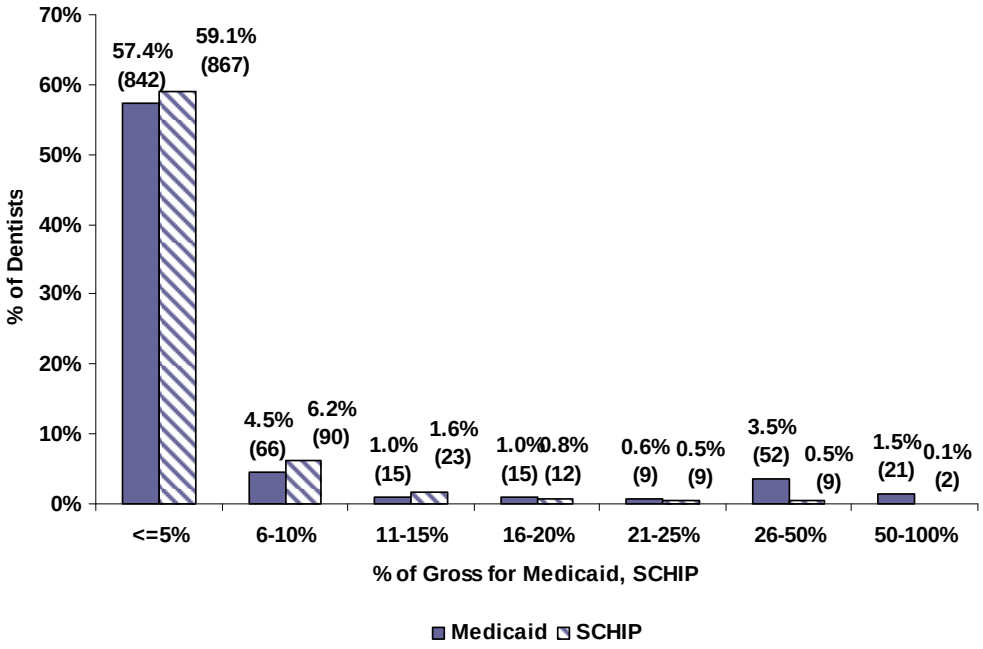
Figure 22: Percentage of Dentists' Average Annual Gross Production from Each Payment Category



††† The term 'Fee for Service Patients' was intended to represent uninsured patients.

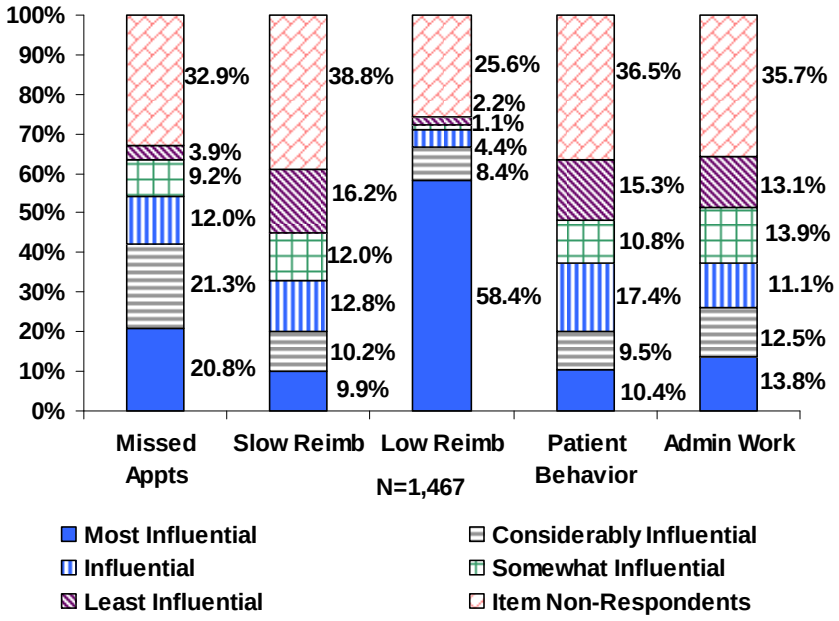
The data indicated that only 5.6% (83) of Utah dentists earn more than 20.0% of their gross production from Medicaid patients.

Figure 23: Distribution of Dentists by Percentage of Average Annual Gross Production From Medicaid & SCHIP



Only 23.9% (351) of Utah dentists currently provide services to the Medicaid population. About 73.3% (1,075) dentists reported that they will not accept new Medicaid patients and cited low reimbursement and missed appointments as the major reasons.

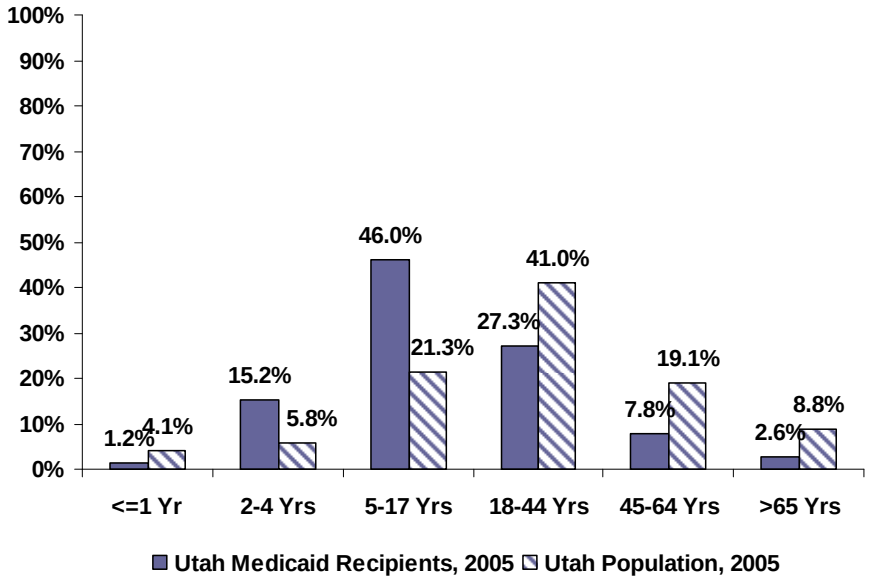
Figure 24: Factors Influencing Non-Acceptance of New Medicaid Patients



The Utah DOH-Health Care Finance (HCF) reported that in 2005, about 88,280 Utahns (3.4% of Utah population) were eligible for Medicaid dental care, while 159,729 Utahns (6.2% of Utah population) were Medicaid dental care recipients. The Medicaid recipients are almost always greater in numbers than the Medicaid eligible population. This is because of the timing difference between when the patients are seen and when the claims are paid.

About 23.9% (351) of Utah dentists reported earning some part of their gross production from Medicaid patients. These data indicate that on average, each dentist who accepts Medicaid patients had to see about 252 Medicaid eligible patients in 2005.

Figure 25: Age Distribution of Utah Medicaid Recipients vs. Utah Population, 2005



Source: Medicaid Recipients – Utah DOH-HCF; Utah Population - GOPB

Comprehensive information about the dental insurance status of Utahns was hard to obtain. About 16.0% of Utah population (412,292) had dental insurance policies in 2005[24]. About 31.2% Utahns (804,012) had comprehensive insurance policies, which could include dental coverage[24]. In 2004, approximately 200,000 children and adults in Utah lacked medical insurance, and there were more than 2.5 times that number (appx. 500,000 children) who lacked dental insurance[25]. According to the National Association of Dental Plans (NADP), about 57.0% of the national population has some form of dental coverage, indicating that about 43.0% lack dental insurance.

About 79.9% (1,172) of the dentist workforce reported that they provide charity care to patients in need. Table 5 provides the dollar equivalent of the charity care provided by the Utah dentist workforce inside and outside Utah‡‡‡.

‡‡‡ Charity was not defined in the survey and could include write-offs. Unlike other data, Charity is reported for all respondent dentists, including dentists who do not practice in Utah.

Table 5: Charity by the Utah Dentist Workforce

Average Charity By	Provided In Utah	Provided Outside Utah
All Dentists	$20,843	$33,422
General Dentists	$19,823	$24,914
Specialist Dentists	$24,626	$24,167

Summary

- Only 38.7% (568) of Utah dentists see patients less than a year old. This percentage includes 97.0% (65) of pediatric dentists.
- 44.8% (533) of general practitioners and 33.3% (3) of prosthodontists reported geriatrics within the scope of their practice.
- Dentists in Utah reported that on average, 60.1% of their gross annual production comes from insured patients; about 5.5% comes from Medicaid patients; 2.8% from SCHIP patients and 31.3% from fee for service patients.
- Only 23.9% (351) of Utah's dentist workforce currently provides services to the Medicaid population.
- About 73.3% (1,075) dentists reported that they will not accept new Medicaid patients and cited low reimbursement and missed appointments as the major reasons.
- About 5.6% (83) of Utah dentists earn more than 20% of their gross production in the form of Medicaid dollars.
- Each dentist who accepts Medicaid patients had to see an average of about 252 Medicaid eligible patients in 2005.

Future Utah Dentist Workforce

There is evidence of increasing demand for dentistry in Utah:

- The practice characteristics of active providers indicate that the dentists in Utah are as busy as their national counterparts.
- Focus on preventive care makes population less than 18 years of age one of the major factors that drive demand for dental services. Although the percentage of Utah population in this age group is expected to remain constant (31.9% in 2005 and 31.3% 2015) through 2015, the actual number of people in this group will increase, resulting in an increased demand for dental care[26].
- The percentage of population 65 years and older, is expected to increase from 8.8% in 2005 to 10.1% in 2015[26]. With an increasing percentage of senior citizens retaining their teeth[23], the demand for geriatric care will most likely increase.
- Utah's population is growing at an average rate of about 2.4% per year (3.2% in 2006)[27] and will contribute to increased demand for dental services in the state.

On the other hand, various sources (see Table 1, Pg.5) indicate a declining dentist-to-100,000 population ratio, both in the nation and in Utah, since 2002. If this trend continues, Utah may be headed towards a dentist workforce deficiency.

In order to project future workforce needs, the UMEC designed a demand model based on population growth in Utah and two different supply models. The supply models are designed to assess the net increase in the active provider dentists in Utah based on the UMEC survey data, the Utah DOPL license data and the PIE policy data. The following sections explain the above mentioned demand and supply models in detail.

UMEC Demand Model

In the absence of benchmarks, the UMEC assumes the following: *when properly allocated to address access-to-care issues, the current dentist-to-100,000 population ratio of 56.8 is sufficient to meet the demand for dentistry in Utah*. Since this is an assumed level of demand, the UMEC will use the term "UMEC demand."

Table 6: Projection of UMEC Demand for Dentists in Utah

DEMAND PROJECTION	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Utah Population (in Thousands)	2,582	2,642	2,704	2,768	2,833	2,900	2,967	3,034	3,101	3,167
2006 Dentist-100,000 Population Ratio	**56.8 dentists per 100,000 population**									
Dentists Required to Meet **UMEC Demand**	**1,467**	**1,501**	**1,536**	**1,572**	**1,609**	**1,647**	**1,685**	**1,723**	**1,761**	**1,799**

Based on this UMEC demand model, Utah will need about 1,799 dentists in 2015. To meet this demand, Utah will have to recruit about 37 new dentists per year in addition to replacing the dentists who leave the workforce (see discussion below about Dentists Exiting the Workforce).

Utah Licensee Supply Model

This model relies on the Utah DOPL licensing data and the UMEC demand model. The UMEC demand model, based on maintaining the current dentist-to-100,000 population ratio of 56.8, requires about 1,799 dentists by the year 2015. A simple linear regression model based on the 1996-2006 Utah DOPL licensing data and Utah GOPB's population projections are used to project the number of new licenses being issued and the number of licenses expiring each year. The UMEC, based on the 2006 survey data, assumes that 67.8% of the Utah DOPL licensed dentists will actively provide services in Utah; and the projected number of new licenses being issued and licenses expiring are adjusted accordingly. Also, since Utah DOPL has a two year renewal cycle for dentist licensure, the licenses expiring in each cycle are averaged over two years.

Figure 26: Projected & Required Number of Dentists: 2006-2015 (Utah Licensee Supply Model)

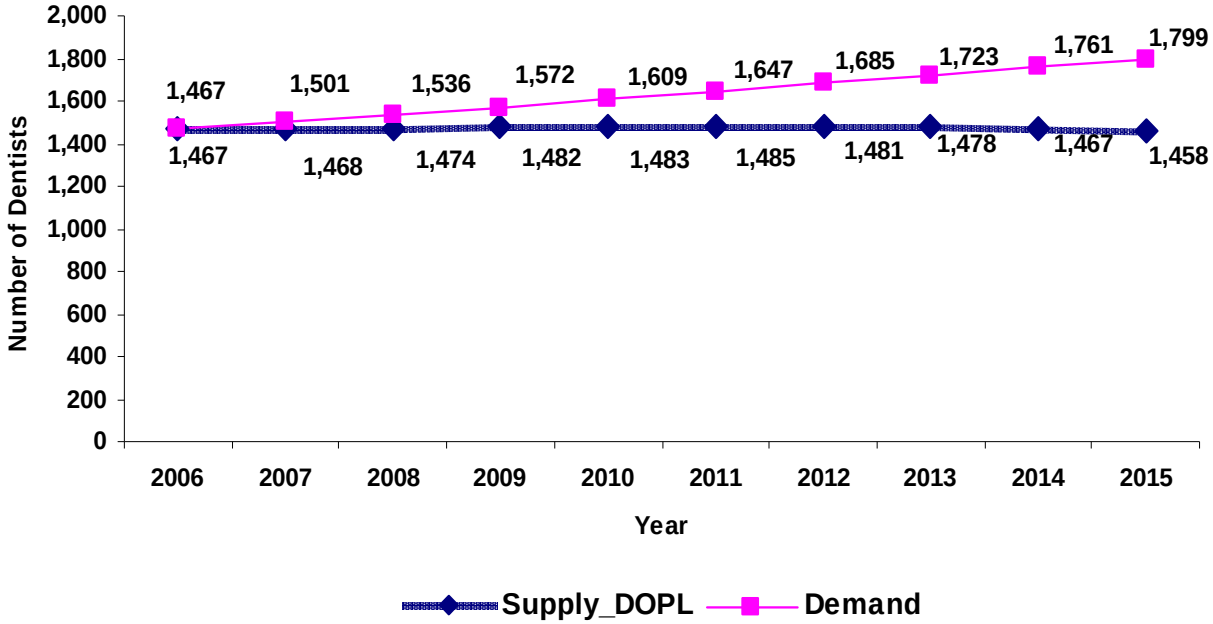


Table 7: Supply Projection Based on Utah DOPL License Data

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
68% of Projected New Licenses Issued_ Utah DOPL,1996-2006	-	78	78	80	81	83	85	87	89	91
68% of Projected License Expiration (Utah DOPL)	-	(77)	(72)	(72)	(81)	(81)	(90)	(90)	(99)	(99)
Projected Supply	**1,467**	**1,468**	**1,474**	**1,482**	**1,483**	**1,485**	**1,481**	**1,478**	**1,467**	**1,458**

According to this model, Utah will need 341 dentists in addition to replacing dentists exiting the workforce (see discussion below about Dentists Exiting the Workforce) to meet the projected demand in 2015.

UMEC-PIE-Utah DOPL Supply Model

This model relies on the Utah DOPL licensing data for new licenses issued and the PIE malpractice insurance data for new policies issued to estimate the number of dentists entering the Utah workforce. To estimate the number of dentists exiting the Utah workforce, the model uses UMEC survey data and the PIE policy cancellation data. The UMEC demand model, discussed above (Utah needs 1,799 dentists by 2015), is used to compare with the net supply of dentists in Utah.

Dentists Entering the Workforce

According to the PIE data (2003-2007), 72.8 dentists enter the workforce each year. Since the PIE reports only 1,291 insured dentists in the year 2006, assuming that all the PIE enrollees are active providers in Utah, the PIE data are weighted up to account for the 1,467 active provider dentists in Utah and the same weight is applied to the data from 2003-2006. This adjustment gives an average of 82.2 dentists entering the Utah workforce each year. This number includes dentists returning after a break in service.

According to Utah DOPL dentist license data (2003-2006), after weighting down to account for the 67.8% of Utah DOPL licensees providing services in Utah, an average of 73.2 dentists enter the Utah workforce each year (it should be noted that the Utah DOPL license data from 1996-2006 indicates an average of 67.0 dentists entering the workforce each year). Based on the Utah DOPL and PIE numbers, the UMEC estimates that the number of dentists entering Utah workforce lies in the range 73.2-82.2.

Dentists Exiting the Workforce

According to UMEC data, about 58 to 70 dentists leave the workforce each year. The UMEC survey data indicate an average of 36 dentists retiring per year over the next 10 years. Another 22 dentists leave the workforce each year for the following reasons – move from Utah to practice elsewhere, retire for a dental mission, go back to school for specialization, leave practice for teaching full time or start a new career. This amounts to about 58 dentists leaving the Utah workforce each year over the next ten years. When the loss in dentists due to pre-retirement reduction in hours – 11.6 per year over the next 10 years is included in the model, Utah will lose about 69.6 dentists each year.

PIE data indicate an average of 46.0 dentists leaving the workforce per year over the past 4 years (2003-2006). When the loss of dentists due to pre-retirement reduction in hours is considered, this translates to a loss of 57.6 dentists per year.

Based on the PIE and UMEC numbers, the UMEC estimates that the number of dentists exiting Utah workforce lies in the range of 46.0-69.6 dentists per year. It should be noted that the UMEC survey data reflect the future as reported by the dentists while the PIE data are from the past. Table 8 compares the PIE data to the UMEC data.

Table 8: Comparison of PIE and UMEC Data

Description	PIE, 2006[1,2]	UMEC, 2006[3]
New Dentists Entering Utah	66.5	73.2[4]
Dentists Moving to Utah from other states	9.4	
Dentist coming back from Military obligations	6.4	
Total Entering Workforce	**82.2**	**73.4**
Completely Retired, Retirement due to Disability, Deaths	19.3	36.0[5]
Move From State to Practice Elsewhere	17.9	5.2
Leave for Dental Mission	4.0	7.0
Return to School for Specialty Training	3.7	2.0
Start Other Career, Teach Full Time etc.	1.1	7.8
Total Leaving Workforce	**46.0**	**58.0**
Loss of Dentists due to Pre-Retirement Reduction in Hours[6]	**11.6**	
Total Leaving Workforce After Accounting for Loss due to Pre-Retirement Reduction in Hours	**57.6**	**69.6**

1. Average of 2003-2007 PIE data.
2. PIE reports 1,291 dentists insured for 2006. This is up-weighted to account for the 1,467 dentists practicing in Utah.
3. 26-28 members overlap in retirement and retirement for mission categories of the UMEC survey data, so these data are adjusted to avoid double counting.
4. Average of 68% of 2003-2006 Utah DOPL new license data. 67.8% is adjustment for dentists actively practicing in Utah.
5. UMEC reports only average number of retirements per year. This does not include deaths and retirement due to disability.
6. The UMEC also collected data for pre-retirement reduction in hours and this translates to a loss of about 11.6-13.4 dentists per year over the next 10 years.

Based on the estimates of number of dentists entering and exiting the workforce, this supply model looks at three different scenarios:

- Probable scenario (75 dentists enter; 58 dentists exit each year; Figure 27)
- Best case scenario (82 dentists enter; 46 dentists exit each year; Figure 28) and
- Worst case scenario (73 dentists enter; 70 exit each year; Figure 29).

Probable Case Scenario

Figure 27: Projected Demand vs. Supply - Probable Case Scenario

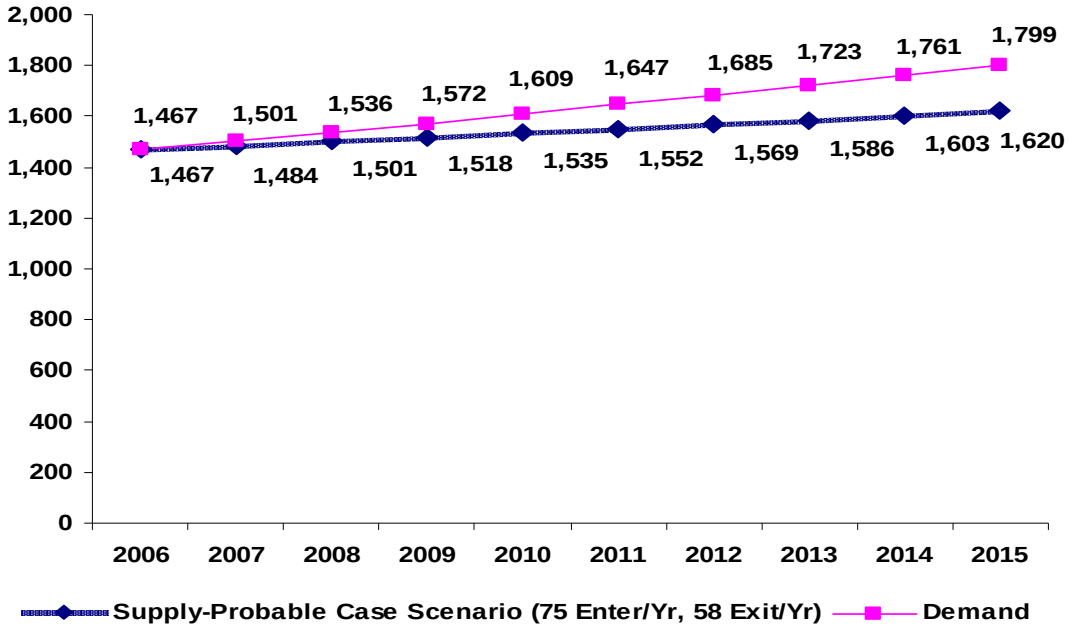


Table 9: Projected Demand vs. Supply – Probable Case Scenario

PROJECTION	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Utah Population (in Thousands)	2,582	2,642	2,704	2,768	2,833	2,900	2,967	3,034	3,101	3,167
Demand	1,467	1,501	1,536	1,572	1,609	1,647	1,685	1,723	1,761	1,799
Enter/Year		75	75	75	75	75	75	75	75	75
Exit/Year		(58)	(58)	(58)	(58)	(58)	(58)	(58)	(58)	(58)
Supply	1,467	1,484	1,501	1,518	1,535	1,552	1,569	1,586	1,603	1,620

Best Case Scenario

Figure 28: Projected Demand vs. Supply - Best Case Scenario

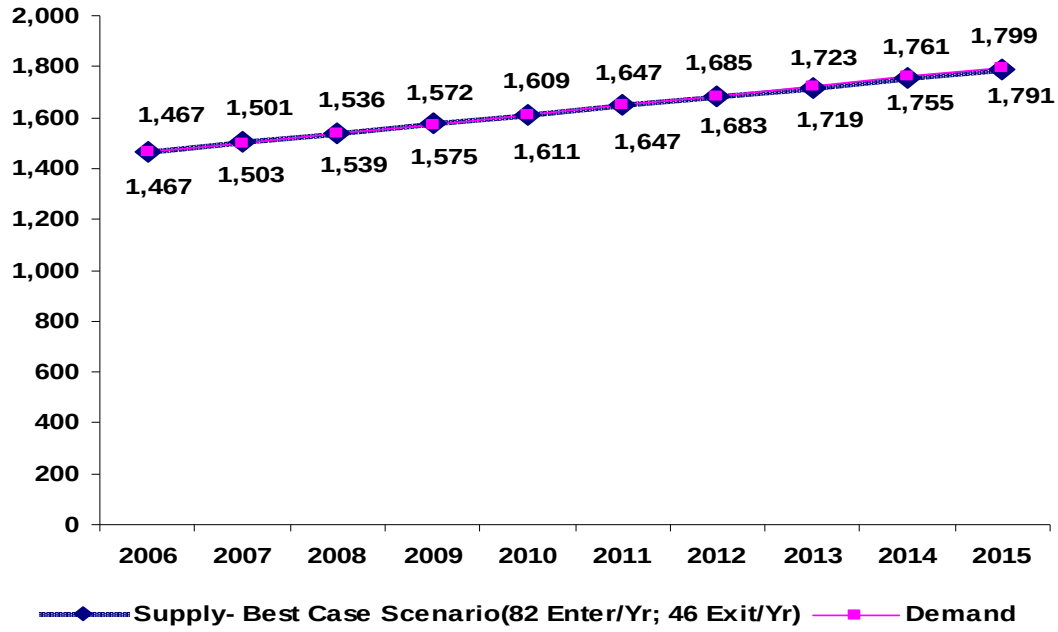


Table 10: Projected Demand vs. Supply – Best Case Scenario

PROJECTION	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Utah Population (in Thousands)	2,582	2,642	2,704	2,768	2,833	2,900	2,967	3,034	3,101	3,167
Demand	1,467	1,501	1,536	1,572	1,609	1,647	1,685	1,723	1,761	1,799
Enter/Year		82	82	82	82	82	82	82	82	82
Exit/Year		(46)	(46)	(46)	(46)	(46)	(46)	(46)	(46)	(46)
Supply	1,467	1,503	1,539	1,575	1,611	1,647	1,683	1,719	1,755	1,791

Worst Case Scenario

Figure 29: Projected Demand Vs. Supply - Worst Case Scenario

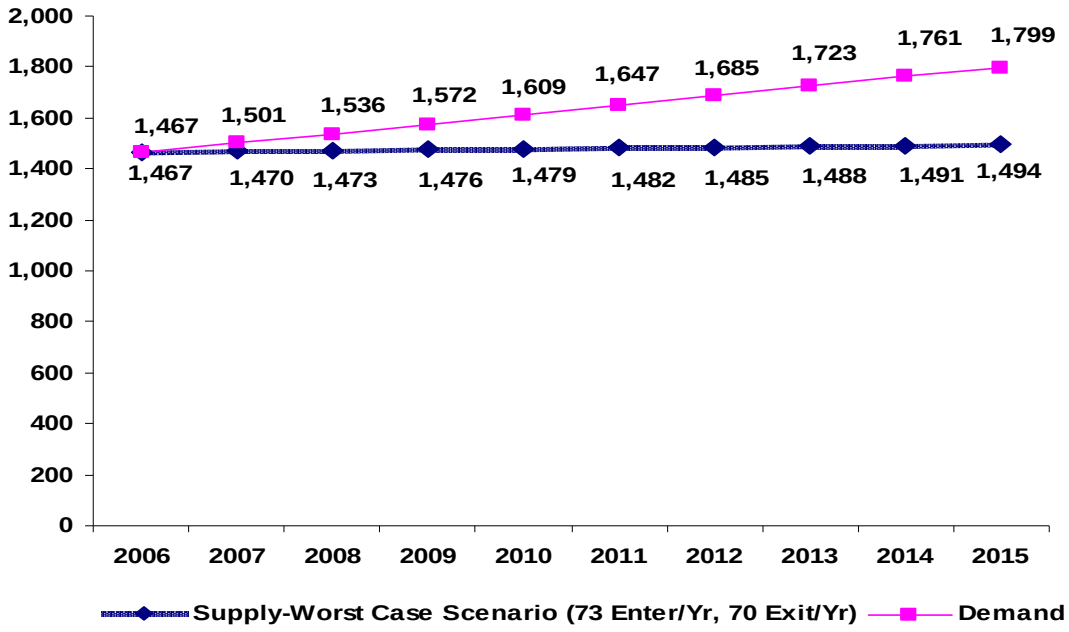


Table 11: Projected Demand vs. Supply – Worst Case Scenario

PROJECTION	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Population (in Thousands)	2,582	2,642	2,704	2,768	2,833	2,900	2,967	3,034	3,101	3,167
Demand	1,467	1,501	1,536	1,572	1,609	1,647	1,685	1,723	1,761	1,799
Enter/Year		73	73	73	73	73	73	73	73	73
Exit/Year		(70)	(70)	(70)	(70)	(70)	(70)	(70)	(70)	(70)
Supply	1,467	1,470	1,473	1,476	1,479	1,482	1,485	1,488	1,491	1,494

The growing population of Utah significantly contributes to the increasing demand for dentists in Utah. In all the scenarios discussed in this section, Utah at best might have enough dentists to meet the increasing demand for services by 2015.

It should be noted that these workforce projection models do not differentiate between part-time and full-time dentists. The models do not address factors that affect dentist productivity – advancements in technology; changes in work hours and work patterns of dentists; role of allied dental workforce; and the social and economic factors that might affect demand for, and expansion of dental practices.

The UMEC demand and supply models used population projections for 2006. A later population estimate for 2006 was higher[28]. This, and the fact that these projection models do not differentiate between part-time and full-time dentists, may understate the projected number of dentists in the workforce and their ability to meet the demand.

Improved dentist productivity affected by factors like improved technology, increased dentist hours and expanded scope and numbers of auxiliary dental workforce could mitigate the need for additional dentists.

Summary

- The UMEC assumes that the current workforce in Utah is adequate to address the existing demand for dentistry; and to ensure an adequate workforce in future, the current dentist-to-100,000 population ratio (56.8) should be maintained.
- An estimated 58-70 dentists exit the workforce each year from 2006-2015, compared to an estimated 64-75 exiting the workforce each year from 2016-2025.
- An estimated 73-82 dentists enter the workforce each year from 2006-2015, compared to an estimated 91-107 entering the workforce each year from 2016-2025.
- To maintain the current dentist-to-population ratio through 2015, as projected by the UMEC, Utah may
    - In the most probable case scenario, need an additional 179 dentists by the year 2015. In this scenario, 75 dentists enter and 58 dentists exit the workforce each year.
    - In the best case scenario, have an excess of 8 dentists by the year 2015. In this scenario, 82 dentists enter and 46 dentists exit the workforce each year.
    - In the worst case scenario, need an additional 305 dentists by the year 2015. In this scenario, 73 dentists enter and 70 dentists exit the workforce each year.
- In any of the projected scenarios, to a lesser extent in the best case scenario, the workforce might continue to thin, primarily due to the population growth rate in Utah.

Utah's Workforce Supply Sources

In the wake of a thinning workforce, Utah needs to assess its dentist workforce supply sources carefully. Three workforce sources have been identified so far:

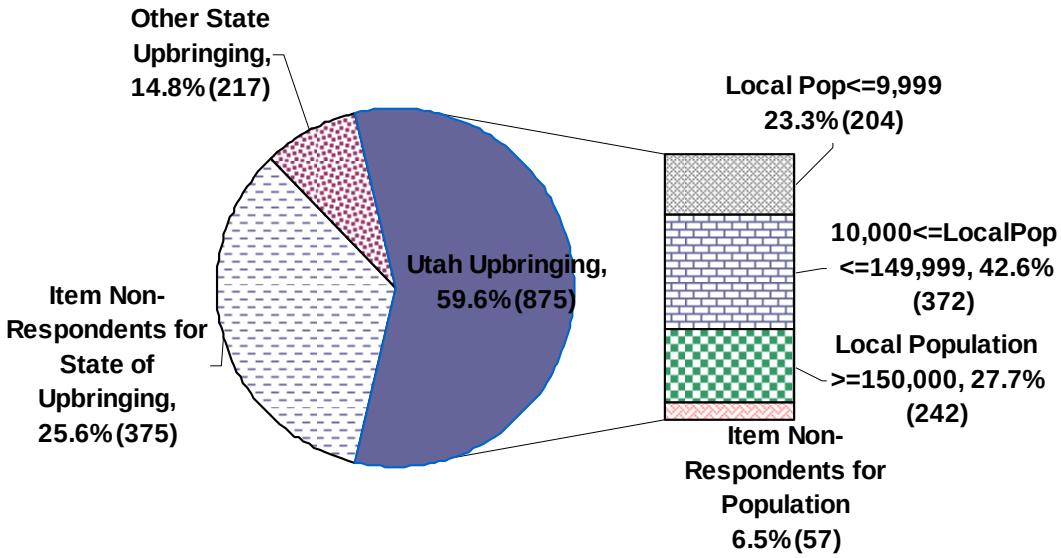
1. Utah background of dentists
2. Regional Dental Education Programs and
3. Residency training programs in Utah.

Utah Background of Dentists

The UMEC survey indicates that Utah dentists tend to return to the state associated with their upbringing and/or undergraduate education. About 59.6% (871) of Utah dentist workforce spent a majority of their upbringing in Utah. These dentists come from a variety of backgrounds – rural, suburban and urban, with an even distribution across the state. Figure 30 shows this distribution.

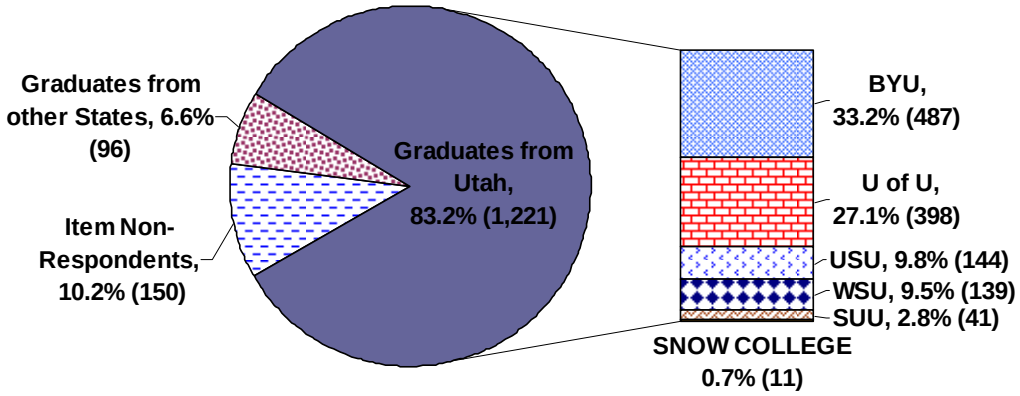
Family located in Utah, recreational opportunities, educational opportunities, climate and the cost of living in Utah are the factors that influenced dentists' choice to practice in the state. About 95.9% (1,407) of Utah dentists reported that family was an influence at some level.

Figure 30: Upbringing of Utah Dentists – State and Local Distribution



About 83.2% (1,221) of Utah dentists have completed their undergraduate education in Utah. Figure 31 shows the distribution of these dentists across the universities in Utah. It should be noted here that Utah does not have a dental school. However, Utah supplies the largest number of dental students per capita to dental schools across the nation[29].

Figure 31: Under Graduate Study of Utah Dentists – State and University Distribution



Since 2000, the number of applicants to dental schools from Utah has increased by 72.3% (from 191 applicants in 2000 to 329 applicants in 2005) compared to the 38.1% increase nationwide (from 7,770 in 2000 to 10,731 in 2005). In the same time frame, Utah applicants enrolled in first year dental school programs increased by 45.1% (from 122 in 2000 to 177 in 2005). First year dental school enrollments from Utah as a percentage of nationwide first year dental school enrollments have increased from 2.9% (122 of 4,234 in 2000) to 3.9% (177 of 4,558 in 2005). It should be noted that the total number of first year positions available in the dental schools increased by only 7.6% between 2000 and 2005[30]. Table 12 summarizes this data.

Table 12: Number of Applicants & First Year Enrollees to Dental Schools in U.S.A. – Utah vs. U.S.A., 2000 vs. 2005

	From Utah			From U.S.A.			Utah as a Percent of U.S.A.	
	2000	2005	Percent Change	2000	2005	Percent Change	2000	2005
Number of Applicants to Dental School	191	329	72.3%	7,770	10,731	38.1%	2.5%	3.1%
Number of First Year Enrollees	122	177	45.1%	4,234	4,558	7.6%	2.9%	3.9%

Source: American Dental Education Association, Annual Reports, Applicant Analysis

The American Dental Education Association (ADEA) reports that 329 Utahns applied to dental schools across the nation in 2005. Of these 177 (53.8%) were enrolled into first year dental school[30]. This translates to one dental school enrollment per 14,287 Utahns compared to the national average of one dental school enrollment per 65,052 people in 2005.

These large numbers of Utahn's who are aspiring dentists are key to sustaining growth in Utah's dentist workforce. To ensure that this supply source is preserved, the demand for dental education among Utahns and the influence of strong family ties and background on practice location choices of Utah dentists should be closely monitored.

NOTE: Figure 32 uses two different scales for Utah and the U.S.

Figure 32: Dental School Applicants and Enrollees – Utah vs. U.S.A.

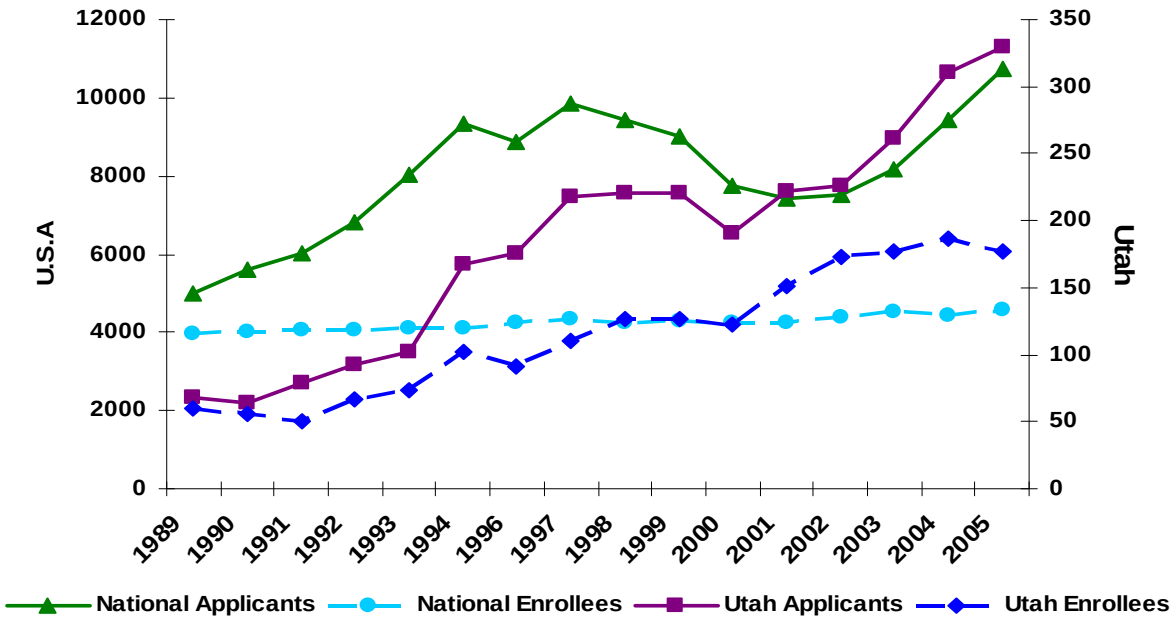
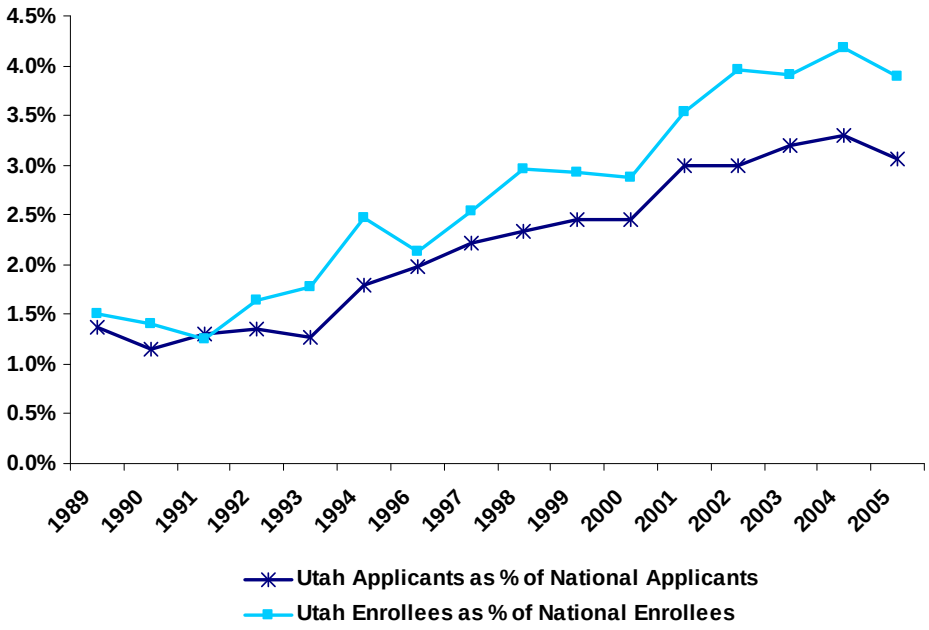


Figure 33: Dental School Applicants and Enrollees – Utah as a percentage of the nation



Regional Dental Education Programs (RDEPs)

Although Utah does not have a dental school, it has established regional dental education programs that help provide dental education to 20 Utah resident students each year. Ten of the twenty students are accepted for the RDEP-Creighton program and the remaining 10 Utah resident students are selected for the RDEP At Large scholarship program.

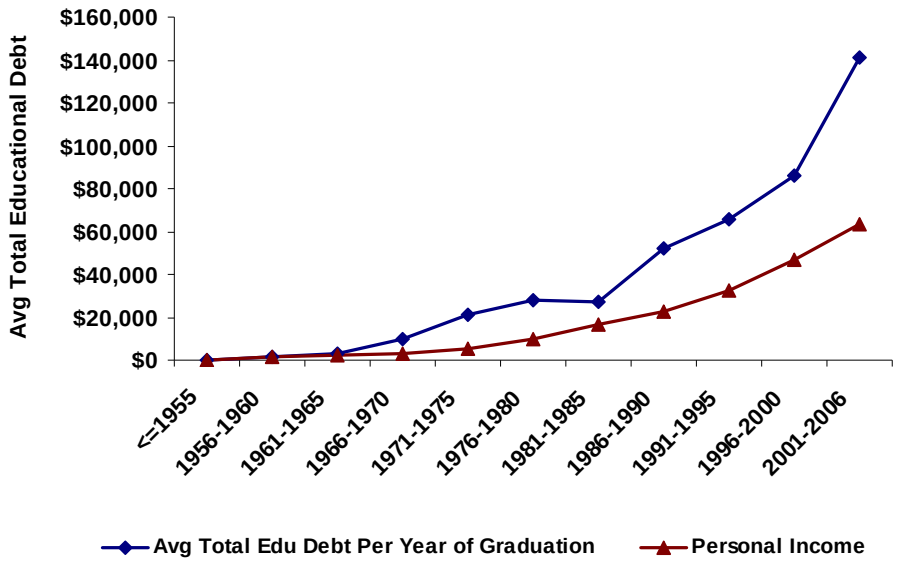
RDEP-Creighton program is a cooperative dental education program between the State of Utah and Creighton University School of Dentistry. Students admitted to the program will receive the first year of their training at the University of Utah. The remainder of their training will take place at the dental school facilities at Creighton University (located in Omaha, NE), which is serving as the parent dental school. During the first year at Utah (2008-2009) the student will pay the equivalent of Utah's tuition (currently $19,970.00 per year, plus approximately $4,700.00 for instruments and supplies). For the 2nd, 3rd and 4th years at Creighton University, the student will pay Creighton's regular tuition, currently at $39,570.00 per year. Upon graduation and/or graduate training, and if the student returns to the State of Utah to practice dentistry, the RDEP program will reimburse the student $18,000.00 per year for three years (the difference between Creighton's tuition and the in-state tuition at Utah). The total cost of dental education will be the same as the in-state tuition at the University of Utah Medical School for all four years (approximately $18,000.00 per year)[31]. In 2005, 247 Utahns applied to the Creighton University School of Dentistry under this program.

The RDEP- At Large scholarship program reimburses 10 selected students when they return to Utah for practice after dental school graduation, completion of a dental graduate program or military scholarship requirement. The graduate receives an annual reimbursement amount of $18,000.00 for each year of dental school that eligibility was maintained. The maximum reimbursement is $72,000.00. The intent behind the RDEP programs is to reduce the student's out-of-state tuition/education costs.

The ADA reports that, on average, a first-year non-resident (out-of-state) dental student pays 52.3% more in tuition and fees ($36,986) compared to a first-year resident (in-state) dental student ($24,286)[32].The non-resident tuition has increased annually by 6.2% since 1996-97. This increase was 7.9% from 2004-05 to 2005-06[32]. ADA's 2005 Survey of Dental Graduates reports that the mountain region dental school graduates are most likely to have educational debt after graduating.

Given the rising cost of dental education, the Regional Dental Education Programs serve as great motivators for dentists selected in these programs to return to Utah for practice. As such, the RDEP programs are the second major supply source of dentists in Utah. Similar programs should be established and expanded to ensure a steady stream of dentist supply.

Figure 34: Avg. Total Education Debt of Dentists Compared to Avg. Personal Income of Utah Population



Source: 2007 Economic Report to the Governor – Table 34

Utah Residency Training Programs

There are three residency training programs in Utah. About 14-15 dentists voluntarily receive post-doctoral dental education through these programs each year. The University of Utah residency program offers ten general practice residency positions, the Veteran Affairs (VA) hospital offers three general practice residency positions and the Primary Care Children's hospital offers one and two pediatric residency positions in alternate years. Retention rates of dentists graduating from these programs should be monitored.

A relevant piece of information that might affect the future supply of dentist workforce in Utah is the Dentist and Dental Hygienist Act Amendments passed in the 2008 General Utah Legislative Session (SB 174, Utah Code Section 58-69-302). This act restricts dentists and dental hygienists who attended dental schools located outside of the United States or its jurisdictions from obtaining a Utah practice license. It should be noted that less than 1% of Utah's dentist workforce is comprised of foreign trained dentists. Though this amendment will have very little impact on Utah's current dentist workforce supply, more information on how this amendment affects the hygienist workforce supply in Utah needs to be obtained. Also, in the wake of a future national workforce deficiency, this act might – to some extent, affect Utah's ability to attract dentist workforce.

Summary

- Utah's major workforce supply comes from:
  - Utah background of dentists
    - About 59.6% (875) active provider dentists in Utah have spent a majority of their upbringing in Utah.
    - About 83.2% (1,221) active provider dentists in Utah have completed their undergraduate education in Utah.
  - Utah's Regional Dental Education Programs
    - Creighton Program – Utah has a contract with Creighton University School of Dentistry. Under this contract, Utah reserves 10 of the 84 available first year positions in Creighton University School of Dentistry.
      - The students pay in-state tuition during their first year of education and out-of-state tuition for the 2nd, 3rd and 4th years of dental education.
      - After graduation, if the student returns to Utah for practice, the difference between in-state and out-of-state tuitions for the 2nd, 3rd and 4th years of dental school is reimbursed to the dentist.
    - At Large Program – Utah signs contracts with 10 applicants who can attend any dental school across the nation. These candidates are reimbursed with the difference between the in-state and out-of state tuitions for dental school, when they return for practice in Utah.
  - Utah's residency training programs - 14-15 dentists per year
    - Ten general residency training positions at the University of Utah
    - Three general residency training positions at the VA hospital and
    - An average of 1.5 pediatric residency training positions at the Primary Children's hospital (1 and 2 training positions in alternate years.
- Utah has supplied the largest number of dental students per capita since 2001/02.
  - In 2005, Utahn's obtained one dental school enrollment per 14,287 population.
  - The number of applicants to dental schools from Utah has increased by 72.3% (from 191 applicants in 2000 to 329 applicants in 2005) since 2000.
  - First year dental school enrollments from Utah as a percentage of nationwide first year dental school enrollments have increased from 2.9% (122 of 4,234 in 2000) to 3.9% (177 of 4,558 in 2005) since 2000.
  - On average, a first-year non-resident (out-of-state) dental student pays 52.3% more in tuition and fees ($36,986) compared to a first-year resident (in-state) dental student ($24,286).
- The non-resident (out-of-state) tuition has increased annually by 6.2% since 1996-97. This increase was 7.9% from 2004-05 to 2005-06.

Dentists' View of the Status of Dental Services in Utah

The UMEC survey instrument asked the dentists about their perspective on the current status of dentist workforce in Utah – within the geographic area of their practice, and in Utah; and the issues that dentistry will face in the future.

About 93.9% (1,378) of Utah dentists thought that there was no shortage/need of dentists within the geographic area of their practice. Of the 4.0% (58) dentists who thought that there is a shortage within their geographic location of practice, a majority reported need for endodontists and pediatric dentists. Table 13 below provides a break-down of specialties in need as reported by the dentists.

Table 13: Categories of Dentists Needed

Shortage Of	Frequency	Percent
General Practitioners	18	31.0%
Endodontists	31	53.4%
Public Health Dentists	12	20.7%
Orthodontists	6	10.3%
Oral Maxillofacial Surgeons	18	31.0%
Pediatric Dentists	23	39.7%
Periodontists	17	29.3%
Prosthodontists	15	25.9%
Total[§§§]	199	-

About 95.1% (1,395) of dentists perceived an adequate dentist workforce in Utah, while 2.4% (35) dentists perceived an inadequate supply of dentists in Utah. 33.2% (463) of the dentists who perceived an adequate supply thought there was an over-supply of dentists in Utah. Table 14 below provides a condensed list of these explanations.

Table 14: Explanation of Dentists who Perceived an Adequate Workforce Supply in Utah

Explain	Frequency	Percent
Too Many Dentists	463	33.2%
Shortage in Rural Areas/Maldistribution	29	2.1%
Less Wait Time/Open Chair Time	15	1.1%
Shortage of Medicaid Providers	8	0.6%
Low Fees in Utah	6	0.4%
Many LDS Dentists want to Return to Utah	6	0.4%
Do Not Need Dental School	5	0.4%
Difficult to Start New Practice	3	0.2%
Other	9	0.6%
Item Non-Respondents	851	61.0%
Total	1,395	100.0%

[§§§] The total (199) is more than the number of dentists who perceived a shortage/need for practitioners within the geographic area of their practice (58). This is because each respondent could check more than one option. The percentages however, are based on 58 dentists.

About 14.9% (219) dentists perceived that the over-supply of dentists could be an issue for dentistry in the near future. Managed care control, ethics in dentistry followed as probable future issues faced by dentistry. Table 15 below provides a condensed list of what the dentists consider to be possible future issues faced by dentistry.

Table 15: Future Issues Faced by Dentistry

Future Issues for Dentistry	Frequency	Percent
Too Many Dentists	219	14.9%
Managed Care Control	195	13.3%
Ethics	67	4.6%
Cost of Education, Insurance*	52	3.5%
Low Reimbursement*	35	2.4%
Government Regulation	28	1.9%
Access to Care	25	1.7%
Affordable Care	17	1.2%
Commercialization of Dentistry	15	1.0%
Geriatric Care	12	0.8%
Shortage of Dentists	11	0.7%
New Technology	11	0.7%
Low Income/Bankruptcies of Dentists	11	0.7%
Medicaid Crisis	9	0.6%
General Dentists Doing Specialty Work	9	0.6%
Need Dental School in Utah	8	0.5%
Faculty Shortage	8	0.5%
Specialties	6	0.4%
High Overhead	5	0.3%
Retirement of Dentists	3	0.2%
Patient Misconceptions	2	0.1%
Over Utilization	2	0.1%
Other	52	3.5%
Item Non-Respondents	668	45.5%
Total	1,467	100.0%

It is surprising to see the strong perceptions of over- and adequate- supply of dentists in Utah given the self-reported practice data (dentist practice hours and patient wait days for appointments), which indicate that the dentist workforce in Utah is as busy as the dentists in the nation. Benchmarks defining an adequate workforce in Utah are essential to determine the status of the Utah dentist workforce.

Though Utah might not be in need of dentists right now, increasing population will dilute the workforce. Given the declining national dentist-to-population ratio, relatively lower earning potential in Utah and the ever increasing cost of education, Utah needs to prepare itself for increasing competition among states to attract the dentist workforce.

Summary

- About 93.9% (1,378) of Utah dentists thought that there was no shortage/need of dentists within the geographic area of their practice.
- About 95.1% (1,395) of Utah dentists reported that they perceive an adequate workforce in Utah. Of these,
    - 463 (33.2%) perceive an oversupply and
    - 29 (2.1%) dentists perceive a maldistribution of dentists in Utah.
- Utah dentists perceive that an over-supply of dentists, managed care control and ethics are the top three future issues of dentistry.

Summary of Findings

The dentist workforce data collected by the UMEC survey and supporting data lead to the following findings:

Current Utah Dentist Workforce

- As of 2006, there are 1,467 active provider dentists, including 1,363 (92.9%) active full-time practitioners and 104 (7.1%) active part-time practitioners, in Utah.
- In Utah, the 2006 dentist-to-100,000 population ratio is 56.8 (Utah Population: 2,582,371).
- The dentist-to-100,000 population ratio in Utah has declined since 2002 – from 61.7 in 2002 to 56.8 in 2006.
    - This trend is also supported by the Utah Dental Association data – from 61.7 in 2002 to 58.7 in 2006.
- About 74.8% (1,097) of the dentists practice in the urban counties where 75.6% (1,953,169) of the population lives in these counties, suggesting an absence of maldistribution issue at the macro level.
    - Counties have been identified where 1.7% (44,580) to 4.0% (103,295) of Utahns either have dentist-to-100,000 population ratios less than half the state average or live in designated Geographic Dental Health Professional Shortage Areas (HPSAs).
    - About 6.5% (167,733) of Utahn's are low income people residing in counties designated as low income dental HPSAs.

Workforce Demographics

- Racial and ethnic mix of the dentist population in Utah is disproportionate to the racial and ethnic mix of Utahns.
    - Less than 1.0% (14) of Utah's dentist workforce is of Hispanic ethnicity compared to 11.2% (285,607) of Utah's 2006 population estimate.
    - 1.7% (25) of dentists in Utah belong to races other than Caucasian compared to 5.1% (130,053) of Utah's 2006 population estimate.
- Only 1.6% (23) of Utah's dentist workforce is female; 19.0% (33,631) of the national dentist workforce is female.
- The dentist workforce in Utah is younger than its national counterpart.
    - The average age of a Utah dentist is 46.5 years (median age is 46.0 years) compared to 48.0 years in the mountain region and 49.1 years in the nation.
    - 15.6% (228) of Utah dentists are under age 35, 40.6% (596) are between the ages of 35-54, and 23.1% (338) are age 55+.
- The self-reported average age of retirement for a Utah dentist is 65.
- Utah will lose about 36 dentists per year over the next ten years due to retirement.
- As a result of pre-retirement reduction in practice hours, Utah might lose an additional 116-134 full time equivalent dentists in the next ten years.

Practice Characteristics

- 95.1% (1,395) of Utah's dentist workforce is in private practice.
- Of the total 1,467 active provider dentists in Utah, 80.5% (1,189) are general dentists and 19.4% (285) are specialist dentists.
    - Endodontics-35; Pediatric Dentistry-67; Periodontics-17; Prosthodontics-9; Public Health Dentistry-0; Orthodontics, Dentofacial and Orthopedics-103; Oral and Maxillofacial Surgery-46; Other-8.
- The average annual gross production of active providers in Utah is $591,899.
- The average annual net income of active providers in Utah is $158,271 and that of active private practitioners in Utah is $160,022.
    - Using the number of dentists in these categories reported by the ADA, UMEC computed the average annual net income for all the active private practitioners in the U.S. as $198,989.
- Utah dentists appear to be as busy as dentists across the United States.
    - While active providers in Utah spend an average of 34.7hrs/week in patient care the ADA reports 32.1hrs/wk in patient care for independent dentists in the nation.
    - Active provider dentists in Utah have an average wait time of 8.7 days before a patient can get an appointment to see the dentist. According to the ADA, in 2004, independent dentists in the nation had an average wait time of 7.6 days before an established patient can get an appointment to see the dentist and 9.1 days for new patients.
- Allied Dental Workforce:
    - Dental Assistants
        - 95.9% (1,408) of Utah dentists employ one or more dental assistants
        - On average, a Utah dentist employs 2.8 assistants, each working 20hrs/wk
    - Dental Hygienists
        - 57.8% (848) of Utah dentists employ one or more dental hygienists
        - On average, a Utah dentist employs 1.5 hygienists, each working 21hrs/wk
    - Administrative Assistants
        - 91.1% (1,337) employ one or more administrative assistants
        - On average, a Utah dentist employs 1.9 administrative assistants, each working 26hrs/wk.

Patient Demographics

- Only 38.7% (568) of Utah dentists see patients less than a year old. This percentage includes 97.0% (65) of pediatric dentists.
- 44.8% (533) of general practitioners and 33.3% (3) of prosthodontists reported seeing geriatric population within the scope of their practice.
- Dentists in Utah reported that on average, 60.1% of their gross annual production comes from insured patients; about 5.5% comes from Medicaid patients; 2.8% from SCHIP patients and 31.3% from fee for service patients.
- About 5.6% (83) of Utah dentists earn more than 20% of their gross production in the form of Medicaid dollars.

- Only 23.9% (351) of Utah's dentist workforce currently provides services to the Medicaid population.
- About 73.3% (1,075) of dentists reported that they will not accept new Medicaid patients and cited low reimbursement and missed appointments as the major reasons.
- Dentists who accept Medicaid patients had to see an average of about 252 Medicaid eligible patients per dentist in 2005.

Future Utah Dentist Workforce

- UMEC assumes that the current workforce in Utah is adequate to address the existing demand for dentistry; and to ensure an adequate workforce in future, the current dentist-to-100,000 population ratio (56.8) should be maintained.
- An estimated 58-70 dentists exit the workforce each year from 2006-2015, compared to an estimated 64-75 exiting the workforce each year from 2016-2025.
- An estimated 73-82 dentists enter the workforce each year from 2006-2015, compared to an estimated 91-107 entering the workforce each year from 2016-2025.
- Utah may need an additional 179 dentists by the year 2015, in the most probable case scenario, to maintain the current dentist-to-population ratio.

Utah's Workforce Supply Sources

- Utah's major workforce supply comes from:
    - Utah background of dentists
        - About 59.6% (875) of active provider dentists in Utah have spent a majority of their upbringing in Utah.
        - About 83.2% (1,221) of active provider dentists in Utah have completed their undergraduate education in Utah.
    - Utah's Regional Dental Education Programs
        - Creighton Program – Utah has a contract with Creighton University School of Dentistry. Under this contract, Utah reserves 10 of the 84 available first year positions in Creighton University School of Dentistry.
            - The students pay in-state tuition during their 1st year of education and out-of-state tuition for the 2nd, 3rd and 4th years of dental education.
            - After graduation, if the student returns to Utah for practice, the difference between in-state and out-of-state tuitions for the 2nd, 3rd and 4th years of dental school is reimbursed.
        - At Large Program – Utah signs contracts with 10 applicants who can attend any dental school across the nation. These candidates are reimbursed with the difference between the in-state and out-of state tuitions for dental school, when they return for practice in Utah.
    - Utah's residency training programs - 14-15 dentists per year
        - Ten general residency training positions at the University of Utah
        - Three general residency training positions at the VA hospital and

        - An average of 1.5 pediatric residency training positions at the Primary Children's Medical Center (1 and 2 training positions in alternate years).
- Utah has supplied the largest number of dental students per capita since 2001/02.
    - In 2005, Utahn's obtained one dental school enrollment per 14,287 population compared to the national average of one dental school enrollment per 65,052 people in 2005.
    - The number of Utah applicants to dental schools increased by 72.3% (from 191 applicants in 2000 to 329 applicants in 2005) since 2000.
    - First year dental school enrollments from Utah as a percentage of nationwide first year dental school enrollments have increased from 2.9% (122 of 4,234 in 2000) to 3.9% (177 of 4,558 in 2005) since 2000.
    - On average, a first-year non-resident (out-of-state) dental student pays 52.3% more in tuition and fees ($36,986) compared to a first-year resident (in-state) dental student ($24,286).
- The non-resident (out-of-state) tuition has increased annually by 6.2% since 1996-97. This increase was 7.9% from 2004-05 to 2005-06.

Dentists' View of the Status of Dental Services in Utah

- About 93.9% (1,378) of Utah dentists thought that there was no shortage/need of dentists within the geographic area of their practice.
- About 95.1% (1,395) of Utah dentists reported that they perceive an adequate workforce in Utah. Of these,
    - 463 (33.2%) perceive an oversupply and
    - 29 (2.1%) dentists perceive a maldistribution of dentists in Utah.
- An over-supply of dentists, managed care control and ethics are, according to the Utah dentists, the future issues of dentistry.

Recommendations

The UMEC, in conjunction with the Dentist Workforce Advisory Committee makes the following recommendations to effectively manage dental healthcare in Utah:

Recommendation 1.

Assess and meet changing market and education needs:

- Demand Study
- Supply Study
- Utah dental education program assessment

Demand Study

The UMEC, in conjunction with the dental care industry in Utah, dental insurance industry in Utah, and the Utah DOH, should develop a system that periodically assesses demand and need for dental services in Utah. Existing data sources and methodologies for measuring demand for dentistry in Utah should be identified. The demand model should account for emergent care, preventive care, pediatric care, geriatric care, special needs patient care, and indigent care.

Supply Study

The UMEC, in conjunction with the Utah DOPL and the UDA, should conduct less comprehensive dentist workforce studies in Utah more frequently. In addition to these, the UMEC should conduct a comprehensive dentist workforce study once every five years.

Utah Dental Education Program Assessment

There are two major categories of dental education programs in Utah – the Regional Dental Education Programs (Creighton and At Large) in the University of Utah and the dental residency training programs (University of Utah, Primary Care Childrens' Hospital and the VA hospital) in Utah.

Retention rates and practice location choices of dentists receiving reimbursement from the Regional Dental Education Programs after termination of their contracts should be monitored. This can be done by a team from the UMEC and the University of Utah. Similarly, the practice location choices and retention rates of the residency training program graduates from Utah should be monitored by the UMEC in conjunction with the respective program personnel. Also practice location choices of the dental school students from Utah should be continually monitored to measure the impact of raising non-resident tuitions.

Recommendation 2.

Improve access to dental care for the underserved:

- Encourage mobile service programs
- Expand the existing loan reimbursement programs
- Increase Medicaid reimbursement rates.

Encourage Mobile Service Programs

The Utah DOH and the community at large should encourage mobile service programs like the Family Dental Plan, Community Partnered Mobile Dental Services. Incentives should be provided to dentists participating in these programs.

Expand the Existing Loan Reimbursement Programs

Utah legislature should expand the existing loan reimbursement programs that encourage dentists to practice in rural areas to encompass underserved areas and populations.

Increase Medicaid Reimbursement Rates

Utah legislature should work with the Utah DOH to increase Medicaid reimbursement rates. This will encourage private dentists to accept underserved populations without jeopardizing their incomes.

Recommendation 3.

The Area Health Education Centers (AHECs) in Utah, the UDA and the Utah State School Board should do the following to address racial and ethnic imbalance:

- Promote dentistry as a career among minority junior high/middle school students.
- Promote awareness of the dental education and loan reimbursement programs available in Utah among the minority populations.
- Promote coalitions between high school counselors and Utah pre-dental program directors.

Recommendation 4.

The Utah DOH, the AHECs in Utah and the UDA should do the following to address gender imbalance in the workforce:

- Study why women are under-represented in the Utah dentist workforce.
- Promote dentistry as a career among female junior high/middle school students.

Recommendation 5.

The Utah DOH, in conjunction with the UMEC, should develop a central data repository for Utah's health and workforce status:

- Design the central database such that Utah data is comparable to the available regional and national data.
- Improve, unify and standardize data collection processes across the state.

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Appendix A: Acronyms & Abbreviations

ADA – American Dental Association

ADEA – American Dental Education Association

AHEC – Area Health Education Center

BHPr – Bureau of Health Professionals

BLS – Bureau of Labor Statistics

CHC – Community Health Center

DOH – Department of Health

DOPL – Division of Occupational & Professional Licensing

DWS – Department of Workforce Services

FTE – Full Time Equivalent

GME – Graduate Medical Education

GOPB – Governor's Office of Planning and Budget

HCF – Health Care Finance

HPSA – Health Professional Shortage Area

NADP – National Association of Dental Plans

PCRHS – Primary Care and Rural Health Services (PCRHS

PIE – Professional Insurance Exchange

SCHIP – State Children's Health Insurance Program

UDA – Utah Dental Association

UMEC – Utah Medical Education Council

U of U – University of Utah

USPS – United States Postal Service

VA – Veteran Affairs

Appendix B: Glossary of Terms

Active Full-time Practitioner (UMEC) – Self reported status of a dentist

Active Part-time Practitioner (UMEC) – Self reported status of a dentist

Active Private Practitioners (ADA) – Dentists engaged in the private practice of dentistry (full- or part-time) as either a primary or secondary occupation. Active private practitioners are one type of professionally active dentists. A dentist in private practice is either an independent (owner) dentist or a non-owner dentist

Active Provider Dentist (UMEC) – A dentist who has an active Utah license and a self-reported practice status of 'Active Full-time Practitioner' or 'Active Part-time Practitioner.' This is equivalent to the professionally active dentists as defined by the ADA, except that active provider dentists do not include interns, residents and graduate students unless they are licensed dentists and self-reported active practitioners in Utah.

Busyness (ADA) – A fair way to represent the workload of a dentist in terms of the number of patients the dentist sees per unit time and the waiting period each patient undergoes to get an appointment with the dentist

Full-time and part-time Private Practitioner (ADA) – A dentist who works 30 or more hours a week in private practice is considered a full-time private practitioner. If less than 30 hours a week is spent in private practice, then a dentist is classified as a part-time private practitioner. Full-time and part-time practitioners include dentists whose primary or secondary operation is private practice

Independent Dentist (ADA) – A sole proprietor or partner who owns or shares in the ownership of an incorporated or unincorporated dental practice. There are two types of independent dentists: solo dentists and independent non-solo dentists

Item Non-Respondents – Dentists who responded to the UMEC survey, but failed to respond to a particular item on the instrument

Non-Owner Dentist (ADA) – A dentist who does not share in the ownership of the practice in which he or she works. There are two types of non-owner dentists: employed dentists and independent contractors

Professionally Active Dentist (ADA) – A dentist whose primary and/or secondary occupation is private practice (full- or part-time); dental school faculty or staff; military dentist; government-employed dentist at the federal, state, or local levels; hospital staff dentist; graduate student, intern or resident; or other health or dental organization staff member

Survey Non-Respondents – Dentists with an active Utah license, who did not respond to the UMEC survey

UMEC Demand (UMEC) – Assumes that the current dentist-to-100,000 population ratio of 56.8, when properly allocated to avoid access-to-care issues, is sufficient to meet the demands of the Utah population

(Source: ADA, Distribution of Dentists in the United States by Region and State, 2005, Glossary).

Appendix C: Survey Instrument

The survey instrument used to collect the 2006 Utah Dentist Workforce data is included in this appendix.

Dear Dentist,

This survey is the collaborative effort of the Utah Medical Education Council, Utah Department of Health, and the Utah Dental Association; with the co-operation of the Division of Occupational and Professional Licensing. Your response to this survey is crucial in determining the active dentist workforce characteristics and distribution in Utah. The data requested will be kept strictly confidential. For any further questions, please contact Utah Medical Education Council at 526-4550. Please return the completed survey in the envelope provided.

Sincerely,

Gar T. Elison
Executive Director
Utah Medical Education Council

Dr. Ron Bowen
President
Utah Dental Association

Dr. Steven Steed
State Dental Health Director/CFHS
Utah Department of Health

Utah Medical Education Council
230 South 500 East, Ste. 550
Salt Lake City, UT 84102
Phone: (801) 526-4550
Fax: (801) 526-4551

Utah Dentist Workforce Survey 2006

1. What is your practice status? (Please check **one** of the following)

- ☐ I **Do Not Provide Any Services** in Utah
- ☐ Retired
- ☐ Retired and Provide **Voluntary/Charity Services Only**
- ☐ Active **Full Time** Practitioner
- ☐ Active **Part Time** Practitioner
- ☐ Occasional Practice in Utah
- ☐ Other (please specify)_____

2. If you **DO NOT PROVIDE services in Utah,** why do you maintain a license in Utah? Check a**ll that apply**:

- ☐ Future Practice Options
- ☐ Employment Requirement
- ☐ Family/Volunteer Treatment
- ☐ Recently Moved from Utah
- ☐ Religious Reasons
- ☐ Military Medical License
- ☐ Sentimental Reasons
- ☐ Other (please specify)_____

3. If you **DO NOT PROVIDE services in Utah,** on a scale of 1-5 (**1 being the most influential and 5 being the least influential**), please rank the following factors that have influenced your choice:

Climate: _____ Pay Scale: _____ Family: _____
Lifestyle: _____ Other (Specify :_____): _____

IF YOU DO NOT PROVIDE SERVICES IN UTAH STOP HERE AND RETURN THE SURVEY. THANK YOU.

4. If you **PROVIDE services in Utah,** on a scale of 1-6 (**1 being the most influential and 6 being the least influential**), please rank the following factors that have influenced your choice:

Climate: _____ Recreational Opportunities: _____
Family: _____ Emphasis & Access to Education/Lifestyle: _____
Cost of Living: _____ Other (Specify :_____): _____

5. Did you practice in another state prior to practicing in Utah? ☐ **Yes** ☐ **No**

If Yes, for how long? _____ Yrs In which state? _____

DEMOGRAPHICS

6. Gender: ☐ Male ☐ Female **Age**: _____

7. Are you of Hispanic ethnicity? ☐**Yes** ☐**No**

8. What is your race?

☐ Caucasian ☐ Pacific Islander ☐ American Indian
☐ African American ☐ Asian ☐ Other (Specify)_____

9. Where did you spend the majority of your upbringing?

City/Town: _____ County: _____ State:_____ Zip Code:_

Estimated population of City/Town:

☐ ≤ 2,500 ☐ 10,000 to 49,999 ☐ 150,000 to 249,999
☐ 2,500 to 9,999 ☐ 50,000 to 149,999 ☐ 250,000 ≥

EDUCATION

10. Please list the institution from which you received an **undergraduate degree**:

Institution:_____ State: _____ Year of Degree: _____

11. Please list the institution from which you received a **doctorate (DDS or DMD) degree**:

Institution:_____ State: _____ Year of Degree: _____

12. If you specialize in a field of dentistry, list the institution at which you earned a specialist degree, the location of that institution and the year you received this degree:

Specialty:_____ Institution: _____ State: _____ Year of Degree: _____

13. Check the program(s) you have completed: ☐ **GPR** ☐ **AEGD** ☐ **None**

List the Sponsoring Institution(s): _____

14. What was your **total educational debt** (including under graduation, graduation and post-graduation)? **$**_____

INCOME

15. On average, what is your **Annual Gross Production**? **$** _____

16. What is your average yearly **net** compensation?

☐ <$50,000 ☐ $125,000 - $149,999 ☐ $225,000 - $249,999
☐ $50,000 - $74,999 ☐ $150,000 - $174,999 ☐ $250,000 - $274,999
☐ $75,000 - $99,999 ☐ $175,000 - $199,999 ☐ $275,000 - $299,999
☐ $100,000 - $124,999 ☐ $200,000 - $224,999 ☐ >$300,000

17. Compared to five years ago has your **net** income:

☐ Increased by _____% ☐ Decreased by _____% ☐ Remained the same

PRACTICE SETTINGS

18. In a typical work week, indicate your current practice setting(s):

Practice Setting	Location I		Location II	
	Zip Code	Hrs/Week	Zip Code	Hrs/Week
Private Practice	_____	_____	_____	_____
Community Health/ Public Health/ Low-Income Clinic	_____	_____	_____	_____
Armed Forces/ Other Federal Services	_____	_____	_____	_____
School Faculty/ Hospital	_____	_____	_____	_____
Other (Specify)_____	_____	_____	_____	_____

19. In a typical work week, how many of the following staff members work at your practice settings?

Staff Category	Location I		Location II	
	Total Num. of Staff	Total Hrs/Week	Total Num. of Staff	Total Hrs/Week
Dental Assistants	# _____	_____	# _____	_____
Dental Hygienists	# _____	_____	# _____	_____
Office / Administrative Staff	# _____	_____	# _____	_____

20. Mark all the services that you provide under the scope of your **primary** practic

- ☐ General Dentistry
- ☐ Endodontics
- ☐ Orthodontics
- ☐ Public Health
- ☐ Oral/Maxillofacial
- ☐ Oral Pathology
- ☐ Pediatric Dentistry
- ☐ Periodontics
- ☐ Prosthodontics
- ☐ Geriatrics
- ☐ Other_____

21. How many **hours per week** do you spend in each of the following categories?

Patient Care: Hrs/wk _____ Teaching: Hrs/wk _____ Research: Hrs/wk _____

22. At what age are you planning to **retire completely** from dentistry? _____

23. Do you plan a professional change **in the next 5-10 years**? ☐ **Yes** ☐ **No**

Check all that apply:

a. **Pre-retirement reduction** in the number of work-hours	☐ **Yes**	☐ **No**
c. Become a **dental faculty**	☐ **Yes**	☐ **No**
If **yes**, ☐ full-time ☐ part-time		☐
e. Participate in a **Dental Mission**	☐ **Yes**	☐ **No**
If **yes**, for how many years _____		
f. Change to a non-dental related career	☐ **Yes**	☐ **No**
g. Back to school for specialization	☐ **Yes**	☐ **No**
h. Other (Specify)_____		

24. Do you plan to relocate within the **next 5-10 years**? ☐ **Yes** ☐ **No**

Check all that apply: ☐ **Leave Utah** ☐ **Urban to Rural** location **within Utah** ☐ **Rural to Urban** location **within Utah**

25. On average, what is the number of patients you see **per month**? _____

26. On average, how many **days** must patients **wait** for an appointment? _____

27. Do you or your staff members provide services in any language(s) other than English? ☐ **Yes** ☐ **No**
(If **yes**, please list the language(s).)
1. _____; 2. _____; 3. _____; 4. _____

28. Are you granted privileges at any hospital(s)? ☐ **Yes** ☐ **No**
If **yes**, please list the hospital(s). _____

29. Besides Utah in what other states are you currently licensed? _____

30. Please check the plan(s) in which you participate and list the number of plans you participate in:

□ **HMOs** #_____ □ **PPOs** #_____

PATIENT DEMOGRAPHICS

31. What **%** of your patients belong to the following age groups for each of the practice locations:

	≤ 1 Yr	**2-4 Yrs**	**5-17 Yrs**	**18-44 Yrs**	**45-64 Yrs**	**≥65 Yrs**
Location I	**___ %**	**___ %**	**___ %**	**___ %**	**___ %**	**___ %**
Location II	**___ %**	**___ %**	**___ %**	**___ %**	**___ %**	**___ %**

32. Do you provide **charity** care? □ **Yes** □ **No**

In Utah: **$** _____ per year

Outside Utah: **$** _____ per year

In Utah, for whom do you provide charity?

□ Children only □ Senior Citizens only □ Any person in need □ Other (Specify :_____)

33. Specify a dollar amount and/or the **% of your gross production** for the care you provide to the following patients per month:

MEDICAID **$** _____; _____ **%** FEE FOR SERVICE PATIENTS **$** _____; _____ **%**
CHIP **$** _____; _____ **%** INSURED PATIENTS **$** _____; _____ **%**

34. Are you taking new patients in any of these categories:

□ Fee for Service □ Medicaid □ CHIP □ Other Insured □ Charity □ None/ Practice is Full

a. If you **DID NOT CHECK MEDICAID** category above**,** on a scale of 1-5 (**1 being the most influential and 5 being the least influential**), rank the **why you do not accept new MEDICAID patients** (please fill one number per option):

Missed Appointments _____ Patient Behavioral Problems _____
Slow Reimbursement _____ Cumbersome Admin Work _____
Low Reimbursement Rate _____

35. Do you **think** there is a **shortage/need for practitioners** within the geographic area of your practice? □ **Yes** □ **No**

If YES, check the categories of practitioners needed in your area:

□ General Practice □ Orthodontics, Dentofacial & Orthopedics □ Periodontics
□ Endodontics □ Oral & Maxillofacial Surgery □ Prosthodontics
□ Public Health Dentistry □ Pediatric Dentistry □ Other_____

36. Do you **think** Utah has an **adequate dental workforce**? □ **Yes** □ **No**

Explain: _____

37. What issues will dentistry face in the near future? _____

38. Do you use oral sedation in your practice? □ **Yes** □ **No**

Thank you for your participation. Please return the survey in the envelope provided.

Appendix D: Background from the 2002 Dentist Workforce Profile

In December 2002, the UMEC compiled and published a dentist workforce profile. The profile was developed based on data collected from various existing sources including the Utah Dental Association (UDA), ADA, Utah DOPL, Utah Department of Workforce Services (DWS), United States Department of Health and Human Services Health Resources and Services Administration (HRSA), Utah Department of Health -Healthcare Financing (Utah DOH-HCF), Utah GOPB and Utah Office of Primary Care and Rural Health Services (PCRHS). Many other state and federal studies were used to supplement these primary sources.

A list of the major findings from the **2002 profile** is provided below. An updated version of this list can be found under the summary of findings section of this 2006 report.

Dentist supply and distribution

- In Utah, the 2002 dentist workforce ratio is 61.7 dentists-per-100,000 population.
- There are an estimated 1,417 professionally active dentists (*Ref: Appendix A*) in Utah.
- The number of dentists-to-100,000 population varies by county, with 17 of Utah's 29 counties experiencing provider ratios less than the state's average (61.7).
- Only 2.8 % of dentists licensed to practice in Utah are female. This constitutes the lowest ratio in the nation. The national average of women in professional dental practice is 14.4%.
- 91% of the Utah dentist workforce is in private practice.
- Of the total 1,286 active private practitioners in Utah, 1064 are in general practice, 36 specialize in Oral & Maxillofacial surgery, 26 specialize in Endodontics, 105 specialize in Orthodontics, 28 specialize in Pediatric Dentistry, 19 specialize in Periodontics, and 9 specialize in Prosthodontics.
- All 29 counties in Utah have been designated as a dental Health Professional Shortage Area (HPSA), but only 5 of the counties have HPSA designations based upon a shortage of dentists. 3.2% of the state's population resides in those 5 counties.
- Utah attracts one dental school graduate for every 36,851 Utah residents, compared to the national average of one graduate to every 67,158 U.S. residents.
- Under current conditions, despite having a supply of dentists better than the national average, Utah will begin to experience a shortage of dentists in the year 2009.
- 79.2% (1,162) of Utah's dentists practice in counties where 76.1% (1,965,184) of the population lives.

Dentist participation in Medicaid

- 6.5% (95) of the Utah dentist workforce treats over two-thirds of the Medicaid patients.
- 20% of dentists accepting Medicaid patients submitted fewer than 6 claims in an entire year.
- For the year 2000, only 56,012 (25.2%) out of 222,360 Medicaid enrollees received dental service(s). The percentage of Medicaid enrollees experiencing the greatest access

difficulties to dental care reside in four counties: Beaver, Garfield, San Juan, and Wasatch.

Dentist workforce retirement activity

- 15% of the dentists licensed to practice in Utah are under age 35, 49% are between the ages of 35-54, and 35% are age 55 and above.
- 2.8% of Utah dentists leave the workforce annually due to retirement.
- An estimated 41.2 dentists will retire in the year 2003, while Utah continues to attract a five-year average of 71.6 new dentists
- The dentist workforce retirement rate is projected to remain constant over the next thirty years, with the exception of a 20% increase in numbers retired between the years 2011-2015 due to a surge in retiring baby-boomers.

The 2002 profile also projected the dentist supply estimates from 2001 to 2026. According to these projections, a dental shortage in Utah is unlikely until the year 2009. After the year 2009, Utah is likely to experience a perpetual shortage.

Appendix E: Descriptive Data and Statistics

The data contained in this appendix represent additional information collected through the 2006 Dentist Workforce Survey not included in the narrative. Data in this section are organized in the order of the survey questions and referenced with the actual survey question number. The results are for all Active Provider Dentists in Utah.

Q2. Dentists who do not provide services in Utah maintain a Utah license because:

Why Dentists Have Utah License	Frequency	Percent
Future Practice Options	392	78.76%
Sentimental Reasons	81	16.3%
Family/Volunteer Treatment	64	12.9%
Military Medical License	57	11.4%
Recently Moved Out of Utah	38	7.6%
Employment Requirements	29	5.8%
Religious Reasons	26	5.2%
Total*	687	-

*The total (687) is more than the number of dentists who do not provide any services in Utah (498). This is because each respondent could choose more than one option. The percentages however, are based on 1,467 dentists.

Q3. Why dentists DO NOT PROVIDE services in Utah?

	Most Influential	Considerably Influential	Influential	Somewhat Influential	Least Influential
Lifestyle	54	83	66	51	80
Climate	55	46	87	52	87
Pay Scale	92	63	46	55	69
Other	123	15	2	9	28
Family	135	49	41	37	86

Q4. Why dentists PROVIDE services in Utah?

	Most Influential	Considerably Influential	Influential	Somewhat Influential	Least Influential	Minimally Influential
Provide Due To Cost Of Living	20	172	286	285	397	89
Provide Due To Other Reasons	41	37	12	8	17	219
Provide Due To Climate	57	234	358	348	182	93
Provide Due To Educational Opportunities	80	406	273	202	233	63
Provide Due To Recreational Facilities	110	394	371	204	144	60
Provide Due To Family	1,218	69	31	14	23	54

Q5. Did you practice in another state prior to practicing in Utah? If yes, for how long? Which state?

Previous Experience in Other States	*Frequency*	*Percent*
Yes	409	27.9%
No	1015	69.2%
Item Non-Respondents	43	2.9%
Total	1,467	100.0%

Years of Previous Practice in Other States	*Frequency*	*Percent*
< 5 Yrs	262	64.1%
5-10Yrs	64	15.6%
11-15 Yrs	18	4.4%
16-20 Yrs	18	4.4%
21-25 Yrs	12	2.9%
26-30 Yrs	8	2.0%
31-35 Yrs	3	0.7%
36-40 Yrs	2	0.5%
Item Non-Respondents	21	5.1%
Total With Previous Practice in Other States	409	99.7%*

*Does not add up to 100.0% due to rounding.

States in which Dentists had Previous Practice	*Frequency*	*Percent*
California	95	23.2%
Illinois	26	6.4%
Texas	26	6.4%
Oregon	20	4.9%
Arizona	18	4.4%
Idaho	18	4.4%
Colorado	15	3.7%
Washington	15	3.7%
Oklahoma	14	3.4%
Montana	12	2.9%
Nevada	12	2.9%
Virginia	12	2.9%
Nebraska	11	2.7%
New Mexico	8	2.0%
Alaska	6	1.5%
Minnesota	6	1.5%
Ohio	6	1.5%
Wyoming	6	1.5%
Alabama	5	1.2%
Iowa	5	1.2%
Kentucky	5	1.2%
Missouri	5	1.2%
Philadelphia	5	1.2%
Wisconsin	5	1.2%

States in which Dentists had Previous Practice	Frequency	Percent
Massachusetts	3	0.7%
Maryland	3	0.7%
Mississippi	3	0.7%
New York	3	0.7%
Michigan	2	0.5%
North Carolina	2	0.5%
North Dakota	2	0.5%
New Jersey	2	0.5%
South Carolina	2	0.5%
West Virginia	2	0.5%
Item Non-Respondents	32	7.8%
Total With Previous Practice in Other States	409	100.7%

*Does not add up to 100.0% due to rounding.

Q11. List the institution from which you received a doctorate (DDS or DMD) degree.

Institute of DDS/DMD Study	Frequency	Percent
Creighton University School of Dentistry	211	14.4%
Northwestern University Dental School	107	7.3%
Virginia Commonwealth University School of Dentistry	100	6.8%
University of Washington School of Dentistry	98	6.7%
University of the Pacific School of Dentistry	96	6.5%
Oregon Health & Science University School of Dentistry	93	6.3%
University of Louisville School of Dentistry	83	5.7%
Case Western Reserve University School of Dentistry	61	4.2%
University of Nebraska Medical Center, College of Dentistry	55	3.7%
University of Southern California School of Dentistry	52	3.5%
University of Iowa College of Dentistry	47	3.2%
University of Oklahoma College of Dentistry	41	2.8%
Loyola University	40	2.7%
Washington University School of Dental Medicine	31	2.1%
Baylor College of Dentistry, Texas A&M University System Health Science Center	28	1.9%
Georgetown University Dental School	23	1.6%
Marquette University School of Dentistry	23	1.6%
Ohio State University College of Dentistry	23	1.6%
University of Texas*	21	1.4%
University of California*	20	1.4%
Tufts University School of Dental Medicine	15	1.0%
Southern Illinois University School of Dental Medicine	15	1.0%
University of Kentucky College of Dentistry	14	1.0%
Indiana University School of Dentistry	12	0.8%
Loma Linda University School of Dentistry	12	0.8%
University of Maryland, Baltimore College of Dental Surgery	12	0.8%
University of Missouri, Kansas City School of Dentistry	12	0.8%
Emory University School of Dentistry	11	0.7%

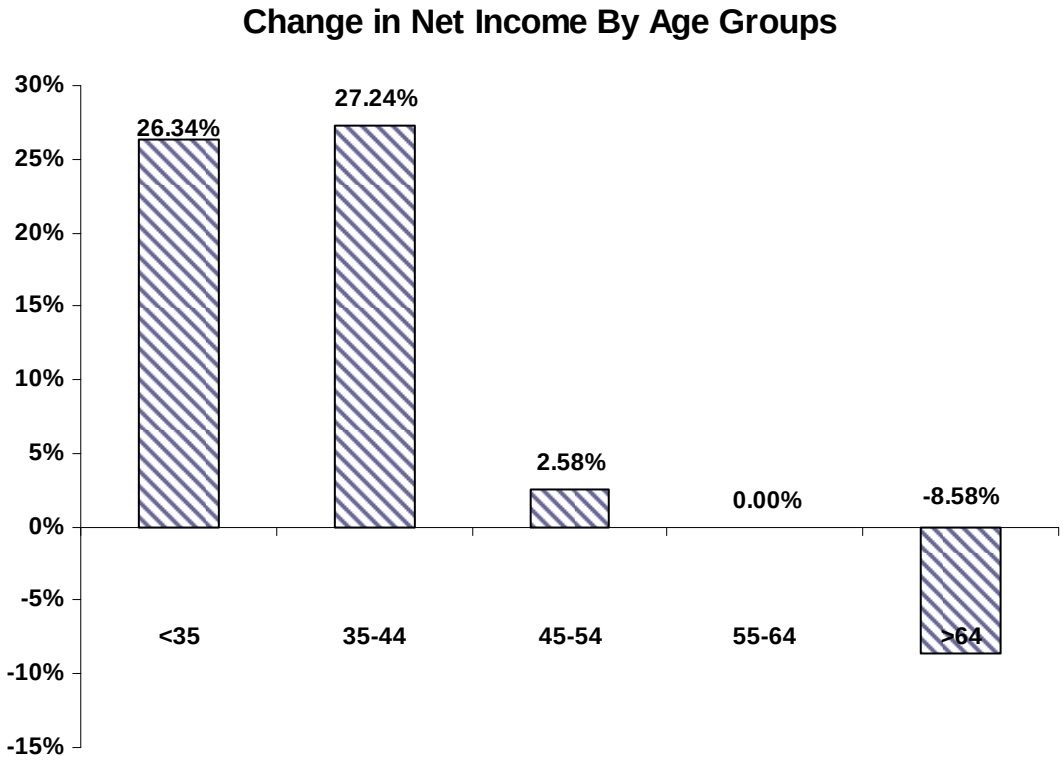
Institute of DDS/DMD Study	Frequency	Percent
Nova Southeastern University College of Dental Medicine	11	0.7%
Temple University School of Dentistry	9	0.6%
University of Michigan School of Dentistry	9	0.6%
West Virginia University School of Dentistry	9	0.6%
University of Pennsylvania School of Dental Medicine	6	0.4%
University of Illinois at Chicago College of Dentistry	5	0.3%
University of Minnesota School of Dentistry	5	0.3%
University of Pittsburgh School of Dental Medicine	5	0.3%
Harvard School of Dental Medicine	3	0.2%
Marine Corps University	3	0.2%
New York University College of Dentistry	3	0.2%
University of Connecticut School of Dental Medicine	3	0.2%
University of Pennsylvania School of Dental Medicine	6	0.4%
University of Tennessee College of Dentistry	3	0.2%
University of Detroit Mercy School of Dentistry	2	0.1%
Louisiana State University School of Dentistry	2	0.1%
Medical University of South Carolina College of Dental Medicine	2	0.1%
Meharry Medical College School of Dentistry	2	0.1%
University at Buffalo School of Dental Medicine	2	0.1%
University of Alberta, Department of Dentistry	2	0.1%
University of Colorado School of Dentistry	2	0.1%
University of Florida College of Dentistry	2	0.1%
University of Saskatchewan College of Dentistry	2	0.1%
Item Non-Respondents	19	1.3%
Total	1,467	100.0%

Q13. Check the programs you have completed.

Residency Program in General Dentistry	Frequency	Percent
General Practice Residency (GPR)	161	11.0%
Advanced Education in General Dentistry (AEGD)	41	2.8%
None	680	46.4%
Item Non-Respondents	585	39.8%
Total	1,467	100.0%

Q17. Compared to five years ago, has your net income increased, decreased or remained the same? By what percentage?

Change	*Frequency*	*Percent*
No Change	343	23.4%
Increased	648	44.2%
Decreased	300	20.4%
Item Non-Respondents	176	12.0%
Total	1,467	100.0%



Q21. Mark all the services you provide under the scope of your primary practice.

Scope of Practice/Specialty	General	Endo	Ortho	Public Health	Oral/Max	Oral Path	Pediatric	Perio	Prostho	Geriatrics	Other
General (N=772)	96.9%	78.8%	22.7%	12.0%	54.5%	22.3%	76.3%	56.7%	73.4%	45.1%	3.0%
Endodontics(N=23)	0.0%	87.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Pediatrics(N=44)	9.1%	6.8%	11.4%	2.3%	2.3%	2.3%	93.2%	4.5%	9.1%	0.0%	0.0%
Periodontics(N=11)	0.0%	0.0%	0.0%	0.0%	18.2%	18.2%	0.0%	100.0%	0.0%	0.0%	9.1%
Prosthodontics(N=6)	50.0%	33.3%	0.0%	0.0%	33.3%	16.7%	33.3%	16.7%	83.3%	50.0%	0.0%
Orthodontics, Dentofacial & Orthopedics (N=67)	0.0%	0.0%	97.0%	0.0%	0.0%	0.0%	0.0%	1.5%	0.0%	0.0%	3.0%
Oral & Maxillofacial Surgery (N=30)	0.0%	0.0%	0.0%	0.0%	100.0%	6.7%	0.0%	0.0%	0.0%	0.0%	0.0%
Other (N=5)	60.0%	60.0%	20.0%	20.0%	40.0%	40.0%	40.0%	60.0%	40.0%	40.0%	0.0%

Q23. Do you plan a professional change in the next 5-10 years? Check all that apply.

Change in Next 5-10 Years	*Frequency*	*Percent*
Pre-Retirement Reduction in Hours	602	41.0%
Full-time Faculty	17	1.1%
Part-time Faculty	138	9.4%
Dental Mission	348	23.7%
Change Career	86	5.8%
Back to School	20	1.4%
Relocate	139	9.5%
Item Non-Respondents	118	8.0%
Total	1,467	100.0%

Q24. Do you plan to relocate within the next 5-10 years? Check all that apply.

*Relocation (N=139 or 10% of 1467)**	*Frequency*	*Percent*
Leave Utah	52	37.4%
Urban to Rural in Utah	28	19.8%
Rural to Urban in Utah	14	9.9%
Item Non-Respondents	46	33.0%
Total	139	100.0%

Q27. Do you or your staff members provide services in any language(s) other than English? If yes, please list the languages.

Service Language	*Frequency*	*Percent*
English Only	746	50.9%
Spanish	591	40.3%
Portuguese	66	4.5%
French	47	3.2%
German	47	3.2%
Japanese	41	2.8%
Korean	17	1.2%
Russian	15	1.0%
Italian	11	0.7%
Chinese	8	0.5%
Navajo	8	0.5%
Bosnian	5	0.3%
Cambodian	5	0.3%
Greek	5	0.3%
Polish	5	0.3%
Translator	2	0.1%
Sign Languages	2	0.1%
Other	25	1.7%
Total*	1,643	-

*The total (1,643) is more than the total number of active providers in Utah (1,467). This is because each respondent could report more than one language he/she provides services in. The percentages however, are based on 1,467 dentists.

Q35. Do you think Utah has an adequate dental workforce? Explain.

Utah has an Adequate Dentist Workforce	*Frequency*	*Percent*
Yes	1,395	95.1%
No	35	2.4%
Item Non-Respondents	37	2.5%
Total	1,467	100.0%

Explain	*Frequency*	*Percent*
Too Many Dentists	463	33.2%
Shortage in Rural Areas/Maldistribution	29	2.1%
Less Wait Time/Open Chair Time	15	1.1%
Shortage of Medicaid Providers	8	0.6%
Low Fees in Utah	6	0.4%
Many LDS Dentists want to Return to Utah	6	0.4%
Do Not Need Dental School	5	0.4%
Difficult to Start New Practice	3	0.2%
Other	9	0.6%
Item Non-Respondents	851	61.0%
Total	1,395	100.0%

Q38. Do you use oral sedation in your practice?

Oral Sedation	*Frequency*	*Percent*
Yes	443	30.2%
No	985	67.1%
Item Non-Respondents	40	2.7%
Total	1,467	100.0%
