



Evolving Delivery Models for Dental Care Services in Long-Term Care Settings: 4 State Case Studies



Center for Health Workforce Studies
School of Public Health
University at Albany, State University of New York

Evolving Delivery Models for Dental Care Services in Long-Term Care Settings: 4 State Case Studies

January 2016



Center for Health Workforce Studies
School of Public Health, University at Albany
State University of New York
1 University Place, Suite 220
Rensselaer, NY 12144-3445

Phone: (518) 402-0250
Web: www.oralhealthworkforce.org
Email: info@oralhealthworkforce.org

PREFACE

The Oral Health Workforce Research Center (OHWRC) at the Center for Health Workforce Studies (CHWS) at the University at Albany's School of Public Health, completed a research project to examine the current and changing practice models utilized in providing dental services in long-term care, residential care, and for homebound individuals through 4 state case studies. A secondary objective was to determine policy variables that may impact the availability of these services within a state or community and describe these impacts. This report describes the findings from case studies conducted for the project.

This report was prepared by Elizabeth Mertz and Cynthia Wides of the Center for the Health Professions, Department of Preventive and Restorative Dental Sciences at the University of California, San Francisco for OHWRC at CHWS, with layout design by Leanne Keough. OHWRC is supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) under grant number U81HP27843, a Cooperative Agreement for a Regional Center for Health Workforce Studies, in the amount of \$436,600. This information or content and conclusions are those of OHWRC and should not be constructed as the official position or policy of, nor should any endorsements be inferred by HRSA, HHS, or the U.S. government.

The mission of OHWRC is to provide accurate and policy-relevant research on the impact of the oral health workforce on oral health outcomes. The research conducted by OHWRC informs strategies designed to increase access to oral health services for vulnerable populations. OHWRC is based at CHWS at the School of Public Health, University at Albany, State University of New York (SUNY), and is the only research center with a unique focus on the oral health workforce.

The views expressed in this report are those of OHWRC and do not necessarily represent positions or policies of the School of Public Health, University at Albany, or SUNY.

January 2016

SUGGESTED CITATION

Mertz E, Wides C. *Evolving Delivery Models for Dental Care Services in Long-Term Care Settings: 4 State Case Studies*. Rensselaer, NY: Oral Health Workforce Research Center, Center for Health Workforce Studies, School of Public Health, SUNY Albany; January 2016.

TABLE OF CONTENTS

EXECUTIVE SUMMARY.....1

TECHNICAL REPORT.....9

 BACKGROUND.....10

 Research Aims.....10

 Regulatory Context.....11

 Payment Policy Context.....12

 Workforce Policy Context.....13

 METHODS.....15

 KEY FINDINGS.....16

 State Highlights.....18

 CASE STUDY 1: CALIFORNIA.....20

 State Overview.....20

 Long-Term Care Dental Delivery in California.....23

 CASE STUDY 2: FLORIDA.....33

 State Overview.....33

 Long-Term Care Dental Delivery in Florida.....35

 CASE STUDY 3: MINNESOTA.....42

 State Overview.....42

 Long-Term Care Dental Delivery in Minnesota.....45

 CASE STUDY 4: NORTH CAROLINA.....53

 State Overview.....53

 Long-Term Care Dental Delivery in Florida.....54

 CONCLUSIONS.....62

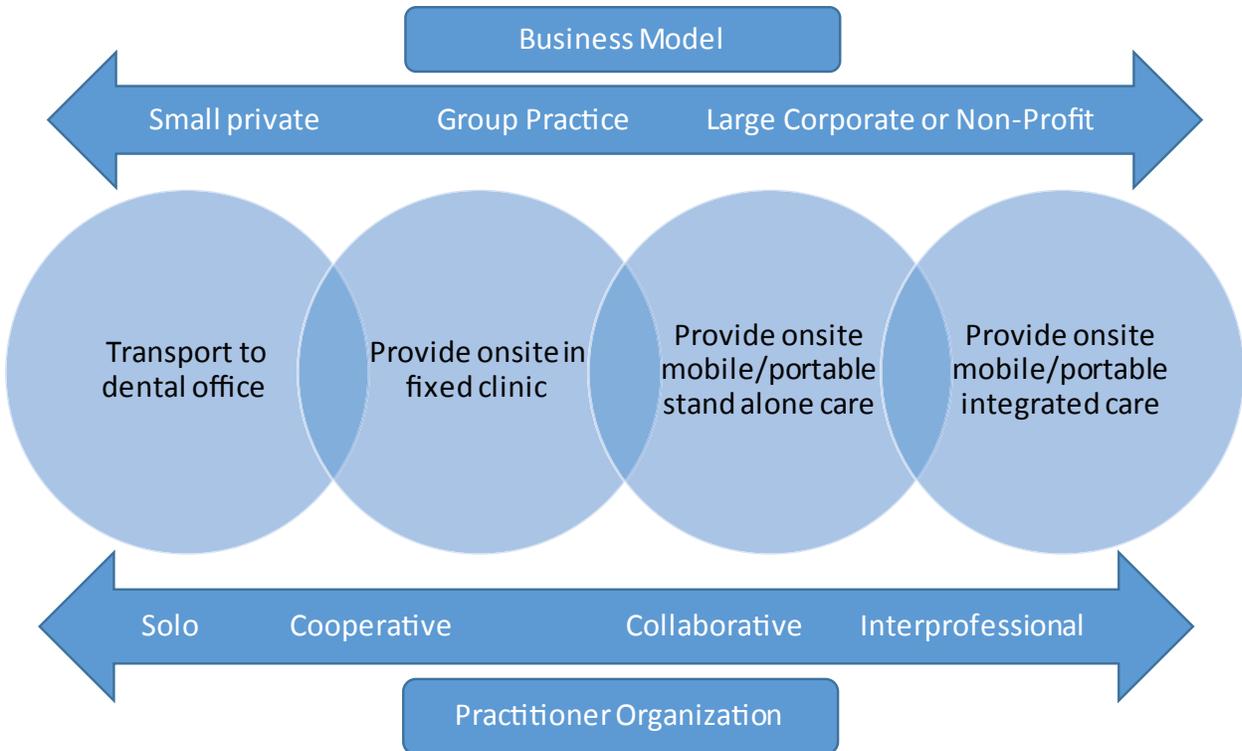
REFERENCES.....63

BACKGROUND

Individuals living in long-term care (LTC) facilities or receiving in-home care (IHC), are significantly more likely to have poorer oral health status compared to individuals living independently.¹ Despite this increased risk, provision of dental services in LTC settings is limited.² As the Baby Boomer Generation ages into LTC, the number of individuals requiring dental care in LTC settings will rise. The supply of dentists is projected to increase; however, enormous barriers to dental care continue to exist for the poor, elderly, and institutionalized population despite evidence of unused workforce capacity in the dental system.³ Additionally, there is little geriatric training for dentists in dental school, and post-graduate training is sparse and highly variable.⁴ Compounding the lack of dental care problem is the fact that Medicaid covers approximately two-thirds of Skilled Nursing Facility (SNF) residents, and many states still do not provide dental coverage for adults. In states that do provide dental coverage, few dentists accept Medicaid patients.⁵

Despite the many challenges, models of dental care are evolving to address the gap of access to dental care in LTC and SNF settings. Prior to the advent of today's sophisticated, mobile, dental equipment and information technology (IT)—electronic health records (EHR)—to support care management, the standard mode of providing dental care for residents of LTC settings was to transport residents to a local dentist willing and able to see them. If a resident was unable or unwilling to be transported, the resident went without dental care, and palliative measures were possibly provided by the LTC facility nursing staff. Currently, a continuum of models exists that extends the capacity of dental care beyond the traditional dental office. These models range from a traditional transport-model; where accountability is primarily the responsibility of the nursing home staff and family, to large comprehensive care organizations (CCOs) that take on accountability for all aspects of dental care provision.

Figure 1. Continuum of Long-term Care Dentistry Models



The study conducted qualitatively examines the delivery of dental care in LTC facilities under varying policy conditions in four U.S. states—California, Florida, Minnesota, and North Carolina. Interviews were conducted with dental providers and LTC administrators, and a comprehensive literature review and state policy analysis of related factors was also completed.

Although each state had a unique overall policy and regulatory environment, common themes emerged around delivering dental care in LTC settings that span these case studies. The key findings provide insight into the relationship between the federal, state, and local standards, and the drivers of changing workforce configurations.

KEY FINDINGS

- **No standard of care exists for provision of dentistry in LTC facilities.**

This critical void was acknowledged by almost all of our interviewees and is one of the reasons that practice models, payment systems, and training around provision of oral health care to geriatric patients varies so widely. State policy and regulatory environments have evolved under the federal mandate to provide oral care, but without evidence-based guidance toward best practices for meeting the growing LTC population's dental needs and without supports for the complexities involved in delivery of safe and high-quality oral care.

- **Best practices for the workforce delivery of dental care to LTC residents require complex, collaborative, interprofessional team efforts.**

All aspects of oral care—daily mouth care, identification of need for professional care, consent acquisition, ensuring reimbursement eligibility and, organization and accessibility of dentists or dental specialists—require coordination among multiple care providers and their respective supporting administrative infrastructures. This effort must span multiple health care domains that do not traditionally overlap and often involve patients who may not have the capacity to make decisions for themselves.

- **Configuration of dental workforce and types of care available to elders and disabled individuals in LTC facilities vary according to policy environment of the state.**

Workforce configuration enabled by state scope of practice legislation (particularly for dental hygiene), availability of geriatric training for dental staff, regulation regarding mobile or tele-health dentistry, and presence and configuration of Medicaid adult dental reimbursement, significantly impact access to care and the quality of care received by vulnerable patients. In states with more restrictions on these enabling factors, care becomes more difficult to obtain.

- **Currently, dental care is delivered in a wide range of models from traditional transport to fully mobile and tele-health enhanced models, for nursing home residents in the U.S.**

The dental care delivery system is evolving toward larger, mobile providers sustained through a variety of cross-subsidies. In some respects, this evolution mirrors the trend toward consolidation in nursing facilities, wherein large, multi-site nursing homes with multiple levels of care for residents may gain efficiencies by contracting with one provider or a handful of providers that are able to meet residents'

needs across all of the home's sites. Further facilitation of this change in the delivery system is the need for providers to maximize their own efficiency in payment and regulatory regimens that are, in many states, constantly in flux and insufficient to fully cover the cost of care.

- **Training of LTC facility staff in daily mouth care for residents is insufficient and regulations around provision of daily mouth care are ineffective to maintain or improve the oral status of patients.**

Even though exemplary training models exist, and despite the fact that some states require training for LTC staff around oral health care for geriatric patients, LTC staff rarely have the depth of knowledge needed to provide daily mouth care in a way that is safe for themselves, and safe for their patients. The low priority given to oral health in regulations around nursing facilities results in a normalization of no or minimal mouth care for patients who refuse care or are viewed as not cooperative.

- **Provision of dental care to patients in LTC facilities is different and more difficult than provision of dental care to patients in other environments.**

Frail and cognitively impaired patients require significantly greater resources from providers including: specific supplies and tools for each patient; additional people to support each patient's movement and positioning; additional medications to keep the patient comfortable and decrease infection risk; greater time to manage patient behavior; and greater time to allow the provider to practice in as ergonomically supportive a position as possible. In addition, the treatment protocols for these patients vary from those that would be appropriate for younger or less frail patients. States largely ignore such differences in care provision in scopes of practice, nursing facility regulations, and reimbursement opportunities.

- **Traditional sources of workforce data do not adequately capture the size, scope, training, or capacity of the professional dental workforce engaged in LTC settings, nor the volume or appropriateness of dental care being provided to nursing home or other LTC residents.**

A thorough examination of supplemental data sources found that LTC dental workforce supply, demand, and future needs cannot be estimated with any existing information, resulting in a large gap in knowledge about the oral health care workforce training, availability, or deployment.

STATE HIGHLIGHTS

California

Registered Dental Hygienists in Alternative Practice (RDHAP) have significantly expanded access to care for individuals in LTC settings, and become a cornerstone of the multiple emerging business models to serve this population. RDHAP are specifically trained in providing dental care for the LTC population, and have filled a gap in access to preventive care for underserved patients, and developed extensive collaborative practices with dentists creating a channel to connect more LTC patients to dentist when needed. As well, the Virtual Dental Home model being tested in California is on the leading edge of using tele-health technology in LTC settings. Unfortunately, the Denti-Cal program, which is the primary payer for LTC dental services, has proposed a policy change that may severely curtail the capacity of dental providers to continue providing care for LTC residents in these innovative models.

Florida

Access to dental care in Florida for individuals in LTC facilities is facilitated by adoption of using incurred medical expense (IME) to allow nursing facilities to purchase dental care for their Medicaid residents with sufficient means and share the cost of the IME with Medicaid. Dental organizations that are servicing LTC settings through this mechanisms have evolved in their overall size, employee type (hygienist and dentist), and type of care provided (largely prophylactic), according to the number and size of nursing facilities that provide dental care for residents through the IME mechanism. It is unclear how widespread this care model extends, and treatment availability remains severely limited by the lack of Medicaid dental benefits for this population.

Minnesota

The LTC dental landscape in Minnesota is shaped by two key factors: 1) the collaborative practice model between hygienists and dental therapists and dentists, and 2) the presence of comprehensive adult dental benefits in conjunction with payment policies such as the “Critical Access Dental Provider Program” that enables care provision to a geriatric population. These factors created an environment that supports model programs other states are seeking to replicate, such as Apple Tree Dental, and in which many residents in nursing facilities are consistently able to maintain and even improve their oral health when they enter LTC. Minnesota continues to face many challenges, particularly in rural parts of the state.

North Carolina

Although North Carolina has restricted use of hygienists for frequent preventive and comfort care due to tight scope of practice requirements, the Mouth Care Without a Battle® program is a model of staff training for LTC facilities seeking strategies to address daily oral care. North Carolina has acknowledged the problems facing the LTC population with regard to oral health and created a special care dentistry advisory group that produced a strong set of recommendations for change and improvement. While these recommendations have not been implemented, they provide a roadmap for advocacy efforts and new geriatric training opportunities in the state.

Technical Report

BACKGROUND

Individuals living in LTC facilities or receiving in-home care (IHC) are significantly more likely to have poorer oral health status compared to those living independently.¹ Despite this increased risk for poorer oral health, there is limited provision of dental services in LTC settings.⁶ Survey research has found that while 93% of dentists report seeing elderly patients in their own practices (most often “well” elders), the majority of dentists do not have an interest in providing geriatric care, and dentists are themselves under-prepared to provide geriatric care.² The American Dental Association has recognized the severity of this shortage and recently launched a campaign to increase dentist participation in geriatric care.⁷

Traditional dental care is not configured to adequately treat the institutionalized or homebound population; however, changing scope of practice for dental hygienists, a focus on incorporation of oral health as part of primary care, and increased use of mobile equipment and tele-health technologies have led to new modalities of translating effective dental interventions into practice in these settings. There remains little awareness about the basic practice models and the utilization of the workforce to provide dental care in nursing facilities, as well as less knowledge of how this may be changing as technology, science, and policy continue to shift within the dental field.

This lack of understanding is fueled by the dearth of data on the dental workforce in LTC facilities. No national or state level workforce data exist that track practice location specific to LTC settings or that document training in geriatrics. Medicare does not cover dental care; therefore, the coverage and utilization data span public, private and cash payers and may not indicate whether a person is institutionalized. With no all-payer claims data for dental care, it is impossible to accurately estimate the volume or quality of dental services provided for patients in these settings.

Research Aims

In order to advance our understanding of the LTC dental workforce, the aims of this study are to:

- 1) Examine the current and changing practice models utilized in providing dental services in LTC, residential care, and for homebound individuals through four state case studies.
- 2) Determine policy variables that may impact the availability of these services within a state or community and describe these impacts.

The following research report provides the regulatory, payment, and workforce policy context for the study and the methodology for the case studies. Each case study is organized as follows. A brief description is provided of the state population and LTC environment followed by a description of the

dental workforce. Building from the federal and state policy summary, the case report describes state-specific critical policy factors uncovered in the interviews and policy review, as well as any relevant advocacy efforts currently underway. Results of the interviews are then organized into sections on the need for care, workforce involved in care, training, payment and financing, the organization of care, and regulation and accountability.

Regulatory Context

Under 54 FR 5359, February 2, 1989 – Subpart B –Requirements for Long-term Care Facilities, the federal government provides extensive regulations for skilled nursing facilities (SNF) and nursing facilities (NF), which include residential nursing facility services for individuals age 21 or older other than services in an institution for mental illness. Few of these regulations specifically address dental or oral health care, and those that do are limited to stipulating that facilities must help residents obtain routine dental services, 24-hour emergency dental care, make prompt referrals for lost or damaged dentures, assist in making dental appointments, and arrange transportation for dental care. Residents with Medicaid must be assisted with obtaining dental care to the extent allowed under the state Medicaid benefits. Facilities have no obligation to pay for routine services for Medicare recipients, and residents covered by Medicare may be charged extra for dental services. Residents covered by either Medicaid or Medicare have the right to basic dental care supplies, including toothbrush, toothpaste, denture adhesive, denture cleaner, dental floss. Additionally, as part of the Resident Assessment standard, all residents must have a comprehensive assessment including dental and nutritional status, but the dental assessment can be done by nursing staff and does not need to be completed by a dental professional. All facilities are required to contract with specified qualified personnel, including dental personnel. No details about this required contract exist in federal regulation.⁸ In 2004 only 63% of nursing homes had a formal contract with a dental or oral health care provider and having a contract in place does not indicate whether appropriate services are being provided.⁹ Each state can add to regulations on nursing facilities in their state, but cannot provide less care than required under federal regulations.

Table 1. Nursing Facility Residents by State¹⁰

State	Residents in SNFs/NFs	Percentage by Sex		Percentage by Age						
	Number	Male	Female	Age 0-21	Age 22-30	Age 31-64	Age 65-74	Age 75-84	Age 85-94	Age 95+
California	106,348	37.6	62.4	0.5	0.7	18.6	16.3	26.1	31.3	6.6
Florida	76,390	34.3	65.7	0.3	0.2	13.3	15.3	28.4	35	7.5
Minnesota	28,416	31.8	68.2	0	0.2	9.6	10.8	25.5	42.1	11.8
North Carolina	38,438	30.4	69.6	0	0.2	13.5	15.9	29.5	34	6.8

Payment Policy Context

Payment for dental care needed by LTC residents occurs through: self-pay by residents with income, private insurance, and Medicaid. Medicaid is the most frequent payer source for those in nursing facilities; however, the availability of adult dental care under Medicaid varies widely from state to state. Adult dental benefits are optional under Medicaid, and range across states from only emergency dental care to full comprehensive dental benefits.⁵ Medicaid has dental payment regulations specific to those residing in nursing facilities in some states but not all. Medicaid dollars can be used in two ways: 1) covered services under the state’s Medicaid dental benefits, and 2) by the Incurred Medical Expense (IME) mechanism, a process where Medicaid can be billed for “medically necessary” dental services not covered under Medicaid. IME is available for residents with some income or assets, such as social security, but is not available for those too poor to make any financial contribution.¹¹

Table 2. Medicaid Dental Benefits in Case Study States¹²

Location	Benefit Covered	Copay Required	Prior Approval Required	Limit on Services Days	Reimbursement Methodology
California	Yes	\$1/visit	Specified services including periodontal, crowns and root canals, pre-denture services, services for nursing facility residents	Coverage limited for non-pregnant or non-institutionalized adults to emergency treatment for relief of pain and infection plus federally required adult dental services unless service could be performed by a physician; \$1,800 cap on services/year but cap doesn't apply to emergency services, maxillofacial surgery or to residents of nursing facilities; crowns not covered	Fee for service
Florida	Yes	5% of payment/procedure		Limited to services to alleviate pain or infection or preparatory or related to dentures	Fee for service
Minnesota	Yes	None	Specified services	Non-pregnant adults limited to exam and cleaning 1/year, frequency of x-rays limited by type	Fee for service
North Carolina	Yes	\$3/episode of treatment	Specified services including periodontal and orthodontic services and maxillofacial surgery	Exam and cleaning 2/year; frequency of x-rays limited by type; root canals limited to anterior teeth; orthodontia, pulp caps, inlays and crowns not covered	Fee for service, state-operated dental school providers settled to federal share of cost annually

Traditional Medicare does not cover dental care; however, Medicare Advantage packages may include dental coverage, but there is no aggregated summary of this coverage, which functions as supplemental insurance. Coverage of services varies as much as any coverage may vary under private insurance programs. Medicare patients who enter skilled nursing care are generally transitioned to Medicaid as their remaining assets are spent down. Some residents will continue to be covered by private dental insurance either out of pocket or as part of a pension or retirement benefit.

Workforce Policy Context

No federal, state, or profession-based certification exists for dental care providers working in LTC settings. The IOM's landmark report 'Retooling for an Aging America' contained no data on the number of dentists or hygienists training in advanced geriatrics or with a geriatric certification or specialization despite estimating a need for more than 7,500 of these providers.⁴ Geriatric dentistry is not an American Dental Association (ADA) recognized specialty, and none of the 509 residencies certified by the American Dental Education Association (ADEA) focus on geriatrics. Thirteen HRSA-funded, multidisciplinary, geriatric fellowships and one advanced training program in geriatric dentistry existed until they were defunded in 2015. A number of dental schools offer rotations in LTC settings for pre-doctoral students, and several dental schools offer continuing education (CE) courses for practicing dentists, specific to geriatric care and range from a few hours to a few days. No comprehensive data are available specific to the number of participants in these educational opportunities.

Research at national and state levels identified LTC as a setting where hygienists increasingly are practicing.¹³ The American Dental Hygienists' Association (ADHA), which tracks legislation allowing hygienists to practice in LTC settings, is currently conducting a survey that will identify the number of hygienists who are eligible to practice in LTC settings with an expanded scope of practice. The survey will also track the number of hygienists whose current primary or secondary practice location is LTC, as well, their patient care hours in LTC settings.

The ADA does not track specific data on dentists or dental assistants working in LTC. The Special Care Dentistry Association (SCDA)—which includes providers focused on geriatric patients, as well as, complex and other institutionalized populations—tracks their fellows as a membership organization. The ADA recently launched a CE course designed to help dentists and up to three non-dentist team members per registered dentist in provision of oral health care in LTC facilities. The self-paced, online course offers ten CE hours for the eight modules. Seven of the modules are focused on the organization and the regulatory environment of an LTC setting. One of the modules is focused on providing care to complex patients.¹⁴ No data are available on how many dentists and their team members have completed the course.

Nursing, psychiatric, and home health aides make up the largest share of the LTC workforce and specifically in nursing facilities these occupations comprise 37% of the workforce, followed by registered nurses (RNs) at 12% and, licensed practical nurses/licensed vocational nurses (LPN/LVN) at 9%.¹⁰ The majority of these workers have little to no training in formal oral health care.

METHODS

This study entailed in-depth, qualitative interviews regarding models of dental care that are being employed in LTC settings. Secondary analysis identified critical policy factors and relevant literature, as well as, major sources, quality, and availability of data on the professional dental workforce that provides care in LTCs. Four case study states, based on their different policy environments, were chosen.

Table 3. Residents Vs. General Practice Dentists by State

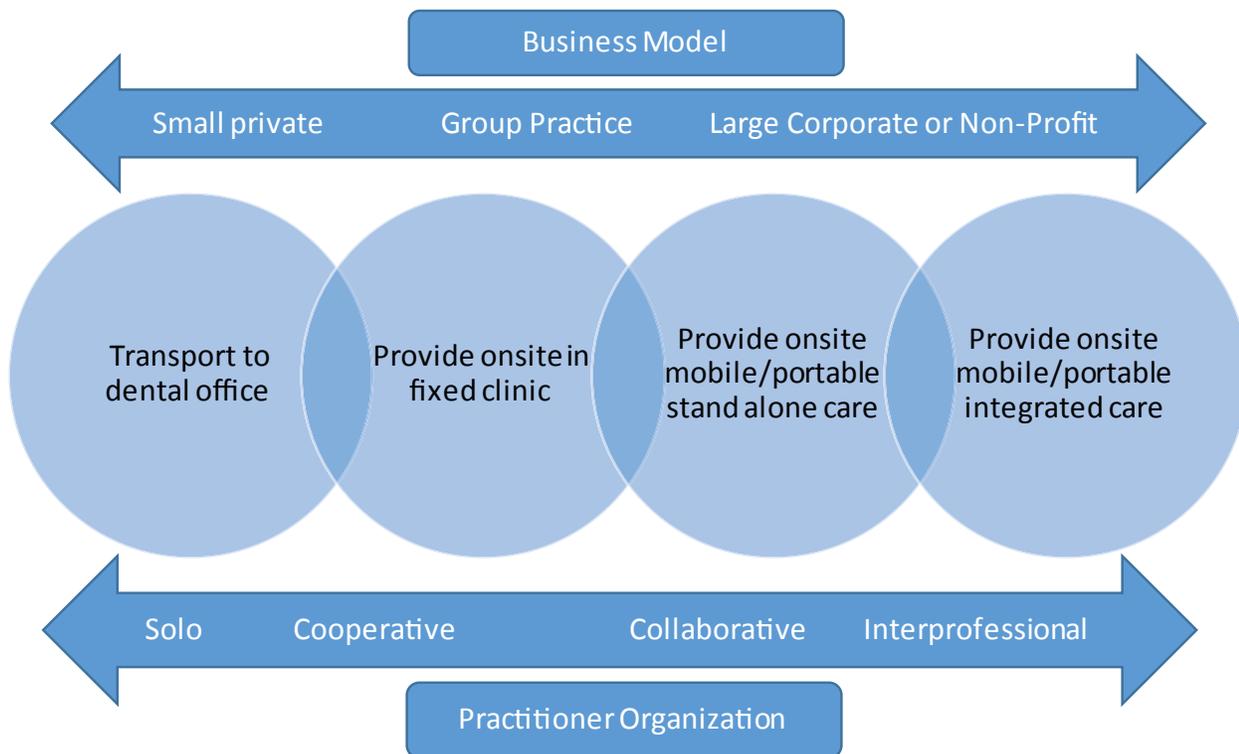
State Population Characteristics	Residents in State ¹⁴	Residents over age 65 ¹⁴		General Practice (GP) Dentists	
	Number	Number	Percent	Number ¹⁵	Ratio GPs: Population
California	38,802,500	4,990,092	12.9	27,434	1:1,414
Florida	19,893,297	3,790,954	19.1	8,988	1:2,213
Minnesota	5,457,173	777,833	14.3	2,857	1:1,910
North Carolina	9,943,964	1,461,149	14.7	4,208	1:2,363

A snowball sampling method was used to identify interviewees—policy experts in each state, dental providers, and LTC staff willing to participate in the study. A phone or email invitation was sent to each potential participant requesting participation in the study. Verbal consent was obtained at the time of the interview. Two structured interview protocols were used: 1) dental providers and 2) staff or administrators in LTC settings. Interview quotes used throughout the report are coded in three parts: 1) State Abbreviation (eg, CA); 2) Setting (1=LTC, 2=Dental, 3=Other); and 3) a letter designating each participant. The interviews, which were conducted by phone or in-person, took from 20 minutes to 60 minutes. Institutional Review Board (IRB) approval (11-07775) for this study was obtained through the University of California, San Francisco. The major limitation of the study is the inability to assess how representative the participants are of the entire state.

KEY FINDINGS

The study assessed policy, practice and professional issues regarding the dental workforce for institutionalized and homebound populations, as well as, identified available data, data gaps, and future data collection avenues in terms of quantifying this critical professional workforce engaged in LTC. Dental care models are evolving to fill the gap in access to care in LTC and SNF settings. Prior to the advent of today's sophisticated mobile dental equipment and information technology, such as electronic dental records to support care management, the standard mode of providing dental care for residents of LTC settings was to transport them to a local dentist willing and able to see them. If the LTC resident was unable or unwilling to be transported, dental care was not provided beyond palliative measures provided by the LTC facility nursing staff. Currently, a continuum of models exists that extends the capacity beyond the traditional dental office. These models range from traditional transport model, where accountability is primarily the responsibility of the nursing home staff and family, to large organizations that take on accountability for all aspects of dental care provision.

Figure 1. Continuum of Long-Term Care Dentistry Models



Although each state was unique in the overall policy and regulatory environments, common themes emerged around delivering dental care in LTC settings that span these case studies. Key findings provide insight into the relationship between the federal, state and local standards and drivers of the changing workforce configurations.

1. No standard of care exists for provision of dentistry in LTC facilities.

This critical void was acknowledged by almost all of our interviewees and is one of the reasons that practice models, payment systems, and training around provision of oral health care to geriatric patients varies so widely. State policy and regulatory environments have evolved under the federal mandate to provide oral care, but without evidence-based guidance toward best practices for meeting the growing LTC population's dental needs and without supports for the complexities involved in delivery of safe and high-quality oral care.

2. Best practices for the workforce delivery of dental care to LTC residents require complex, collaborative, interprofessional team efforts.

All aspects of oral care—daily mouth care, identification of need for professional care, consent acquisition, ensuring reimbursement eligibility and, organization and accessibility of dentists or dental specialists—require coordination among multiple care providers and their respective supporting administrative infrastructures. This effort must span multiple health care domains that do not traditionally overlap and often involve patients who may not have the capacity to make decisions for themselves.

3. Configuration of dental workforce and types of care available to elders and disabled individuals in LTC facilities vary according to policy environment of the state.

Workforce configuration enabled by state scope of practice legislation (particularly for dental hygiene), availability of geriatric training for dental staff, regulation regarding mobile or tele-health dentistry, and presence and configuration of Medicaid adult dental reimbursement, significantly impact access to care and the quality of care received by vulnerable patients. In states with more restrictions on these enabling factors, care becomes more difficult to obtain.

4. Currently, dental care is delivered in a wide range of models from traditional transport to fully mobile and tele-health enhanced models, for nursing home residents in the U.S.

The dental care delivery system is evolving toward larger, mobile providers sustained through a variety of cross-subsidies. In some respects, this evolution mirrors the trend toward consolidation in nursing facilities, wherein large, multi-site nursing homes with multiple levels of care for residents may gain efficiencies by contracting with one provider or a handful of providers that are able to meet residents' needs across all of the home's sites. Further facilitation of this change in the delivery system is the need for providers to maximize their own efficiency in payment and regulatory regimens that are, in many states, constantly in flux and insufficient to fully cover the cost of care.

5. Training of LTC facility staff in daily mouth care for residents is insufficient and regulations around provision of daily mouth care are ineffective to maintain or improve the oral status of patients.

Even though exemplary training models exist, and despite the fact that some states require training for LTC staff around oral health care for geriatric patients, LTC staff rarely have the depth of knowledge needed to provide daily mouth care in a way that is safe for themselves, and safe for their patients. The low priority given to oral health in regulations around nursing facilities results in a normalization of no or minimal mouth care for patients who refuse care or are viewed as not cooperative.

6. Provision of dental care to patients in LTC facilities is different and more difficult than provision of dental care to patients in other environments.

Frail and cognitively impaired patients require significantly greater resources from providers including: specific supplies and tools for each patient; additional people to support each patient's movement and positioning; additional medications to keep the patient comfortable and decrease infection risk; greater time to manage patient behavior; and greater time to allow the provider to practice in as ergonomically supportive a position as possible. In addition, the treatment protocols for these patients vary from those that would be appropriate for younger or less frail patients. States largely ignore such differences in care provision in scopes of practice, nursing facility regulations, and reimbursement opportunities.

7. Traditional sources of workforce data do not adequately capture the size, scope, training, or capacity of the professional dental workforce engaged in LTC settings, nor the volume or appropriateness of dental care being provided to nursing home or other LTC residents.

A thorough examination of supplemental data sources found that LTC dental workforce supply, demand, and future needs cannot be estimated with any existing information, resulting in a large gap in knowledge about the oral health care workforce training, availability, or deployment.

State Highlights

California

Registered Dental Hygienists in Alternative Practice (RDHAP) have significantly expanded access to care for individuals in LTC settings, and become a cornerstone of the multiple emerging business models to serve this population. RDHAP are specifically trained in providing dental care for the LTC population, and have filled a gap in access to preventive care for underserved patients, and developed extensive

collaborative practices with dentists creating a channel to connect more LTC patients to dentist when needed. As well, the Virtual Dental Home model being tested in California is on the leading edge of using tele-health technology in LTC settings. Unfortunately, the Denti-Cal program, which is the primary payer for LTC dental services, has proposed a policy change that may severely curtail the capacity of dental providers to continue providing care for LTC residents in these innovative models.

Florida

Access to dental care in Florida for individuals in LTC facilities is facilitated by the use of incurred medical expense (IME) to allow nursing facilities to purchase dental care for their Medicaid residents with sufficient means and share the cost of the IME with Medicaid. Dental organizations that are servicing LTC settings through this mechanisms have evolved in their overall size, employee type (hygienist and dentist), and type of care provided (largely prophylactic), according to the number and size of nursing facilities that provide dental care for residents through the IME mechanism. It is unclear how widespread this care model extends, and treatment availability remains severely limited by the lack of Medicaid dental benefits for this population.

Minnesota

The LTC dental landscape in Minnesota is shaped by two key factors: 1) the collaborative practice model between hygienists and dental therapists and dentists, and 2) the presence of comprehensive adult dental benefits in conjunction with payment policies such as the “Critical Access Dental Provider Program” that enables care provision to a geriatric population. These factors created an environment that supports model programs other states are seeking to replicate, such as Apple Tree Dental, and in which many residents in nursing facilities are consistently able to maintain and even improve their oral health when they enter LTC. Minnesota continues to face many challenges, particularly in rural parts of the state.

North Carolina

Although North Carolina has restricted use of hygienists for frequent preventive and comfort care due to tight scope of practice requirements, the Mouth Care Without a Battle[®] program is a model of staff training for LTC facilities seeking strategies to address daily oral care. North Carolina has acknowledged the problems facing the LTC population with regard to oral health and created a special care dentistry advisory group that produced a strong set of recommendations for change and improvement. While these recommendations have not been implemented, they provide a roadmap for advocacy efforts and new geriatric training opportunities in the state.

CASE STUDY 1: CALIFORNIA

State Overview

California is the most populous state in the U.S., with a 2014 population estimated at 38,802,500, 12.9% (n=4,990,092) of whom are aged 65 and older.¹⁵ California also has the largest number of nursing home facilities in the U.S., with 1255 total facilities. The majority of these, (51.8%) are from 50 to 99 beds. Twenty-six percent (n=330) of the nursing facilities are from 100 to 199 beds, 17.8% (n=223) contain fewer than 50 beds, and 4.1% (n=52) contain more than 199 beds. Despite the large number of facilities and the second largest population of elders living in nursing homes in the U.S., California is in the lowest quintile of states when ranked by beds per thousand people age 65 or older, and beds per thousand people age 85 or older.¹⁰

Dental Supply, Education, and Workforce

California is estimated to have 27,434 general practice dentists, which translates into one dentist per 1,414 people, but still the state has 566 Health Professional Shortage Areas (HPSAs) and 370 Dental Health Professional Shortage Areas (DHPSAs).^{16, 17} California has six dental schools, which graduated 746 dentists in 2014.¹⁸ Three dental schools have training programs in geriatric dentistry, and two other dental schools with centers focused on care for special patients.

- The Herman Ostrow School of Dentistry at the University of Southern California offers a certificate and a master's of science in geriatric dentistry.¹⁹ Two inaugural students are expected to complete the certificate program in August 2016, and three inaugural students are expected complete the masters of science program in August 2017.
- The University of California San Francisco (UCSF) offers a UCSF Multidisciplinary Geriatric Fellowship in Dentistry, Medicine, and Mental/Behavioral Health. This program graduated five dental fellows from 2003 to 2016. This program is now closed due to the elimination of Health Resources and Services Administration (HRSA) funding support.²⁰
- The University of California Los Angeles (UCLA) School of Dentistry offered a fellowship in geriatric dentistry, which was closed in June of 2015 due to the elimination of HRSA funding support.²¹ UCLA is developing the Center for Geriatric Dentistry, a center focused on improving the oral health and overall well-being of older adults.²²

- The University of the Pacific (UOP) Arthur A. Dugoni School of Dentistry does not have a geriatric specialty program but UOP does house the Pacific Center for Special Care (PCSC), an organization within the school of dentistry focused on improving access to dental care for underserved and vulnerable populations. PCSC has developed a curriculum for training care givers of people with disabilities and frail elders to help them maintain the oral health of the people for whom they are caring.²³ This training set was distributed to all LTC homes in California and an updated edition is available on their website. The school is deeply involved in special care dental education and service for vulnerable populations.²⁴ UOP is also one of two training programs for Registered Dental Hygienists in Alternative Practice (RDHAP), which includes geriatric and LTC training. The other RDHAP program is at West Los Angeles College.
- Loma Linda University houses the Koppel Special Care Dentistry; however, no specific geriatric training opportunities are listed in the school.²⁵
- Western University offers the DMD program but does not have CE or other post-graduate training opportunities.²⁶

California’s dental workforce may be one of the most diverse in the nation in terms of the number of different provider types. In addition to general and specialist dentists, there are six clinical dental providers licensed in the state, including Registered Dental Assistant (RDA), Registered Dental Assistant in Extended Functions (RDAEF), Registered Dental Hygienist (RDH), Registered Dental Hygienist in Alternative Practice (RDHAP), and Registered Dental Hygienist in Extended Functions 1 and 2 (RDHEF-1, RDHEF-2). Additional permitting is required for Orthodontic Assistant, Dental Sedation Assistant, and dentists who wish to perform general or conscious anesthesia and sedation.²⁷

Table 4. Counts of Dentists by Specialty: U.S. vs California¹⁶

Location	General Dentist	Endodontist	Oral Surgeon	Orthodontist	Pedodontist	Periodontist	All Other Specialties	Total
United States	167,960	5,417	7,336	10,583	7,059	5,759	6,073	210,187
California	27,434	858	850	1,509	893	831	867	33,242

Critical Policy Factors

Nursing home facilities in California are subject to few dental health-related regulations in addition to those stipulated under federal regulations. The regulations include: a definition of a dentist as a person licensed as a dentist by the California Board of Dental Examiners; a requirement that written arrangements be made for obtaining all necessary services prescribed by a dentists; transportation must be arranged for services that cannot be brought into the facility; the advisory dentist (eg, dental director or contracted dentist) must participate in patient care staff development at least annually and

must approve oral hygiene policies and practices for patient care at the facility; oral hygiene services must be provided as a nursing service that allow the patient to be free of offensive odors; a committee must be formed to establish policies governing dental services and; the contact information for the patient's dentist must be included in the admission records.⁸

California's dental payment policy environment is rapidly evolving. For over 40 years, the State has provided comprehensive dental coverage for adults through the Medicaid dental program (Denti-Cal), including dental care for institutionalized elderly patients enrolled in Medicaid. In 2009 the adult dental benefits were cut to emergency-only services as part of budget adjustments after the great recession; however, the benefits for residents of SNFs and independent care facilities (ICFs) were maintained during this time.²⁸ Under the Affordable Care Act (ACA), California opted to adopt the Medicaid expansion, and, in mid-2014, the adult dental benefit was partially reinstated.²⁹ The expansion increased the availability of dental coverage to newly eligible adults, and coupled this expansion with a huge outreach effort to enroll all eligible population groups. It is unlikely this expansion added new institutionalized seniors as approximately two-thirds of SNF residents are enrolled in Medicaid to cover their nursing care, but it created more demand for the already shrinking proportion of the dentist population willing to see Medicaid patients.³⁰

Denti-Cal offers adult dental coverage of up to \$1,800 in services annually including preventive, restorative, and periodontal dental procedures, along with dentures and oral surgery services for non-pregnant, non-disabled adults.³¹ Unlike coverage for non-institutionalized Medicaid populations, there is no cap on Denti-Cal coverage for SNF residents, but there are additional treatment authorization request (TAR) requirements for assessing the medical necessity of care.³² One of the requirements is that a second dentist on contract with Delta Dental of California (the agency administering the Denti-Cal program) may be asked to re-evaluate the patient through an in-person dental exam in order to process TARs for dental treatment or dentures. Despite a public records request, neither Delta Dental, nor the Department of Health Care Services, was able or willing to provide statistics on the volume, cost, or performance of the oversight model for SNF dental services. Medicare beneficiaries make up 13% of California's population.²⁷ Medicare Advantage uptake in California is 38% of all Medicare Enrollees, and these plans may or may not cover dental care.¹⁸

California has a liberal scope of practice environment for dental hygienists, allowing extended function hygiene and assisting that allows allied providers to do more tasks under the supervision of a dentist. California has independent practice hygienists, RDHAP, which are allowed to provide care within their scope in underserved settings, including LTC and other institutional settings such as prisons and schools.¹³ When Denti-Cal was cut in 2009, RDHAP expanded their practices into nursing home settings where one of the few sources of payment remained. When the adult benefit was reinstated, many RDHAP were well established in their LTC practice and continue this work. In 2014 a new law, AB 1194, was passed that

allows Denti-Cal dentist providers to practice tele-dentistry, and allows allied providers to place interim therapeutic restorations.³³ This law enables the “Virtual Dental Home” model being pioneered in California as one of the ways in which nursing home care can be provided.³⁴⁻³⁷

Statewide Support and Advocacy

California has a number of advocacy groups focused on advancing the oral health of seniors. This year the Center for Oral Health focused its annual symposium entirely on this topic and is conducting a dental needs assessment of elders in the state.³⁸ A Statewide Task Force on Oral Health for People with Disabilities and Aging Californians was established in 1999 with help from a grant from the State Council on Developmental Disabilities to University of the Pacific faculty members Dr. Paul Glassman and Christine Miller.³⁹ The taskforce was designed to advocate for and expand access to affordable, quality oral health care for people with disabilities and older Americans. The taskforce remains an active advocacy resource in the State. Despite advocacy efforts, Oral Health America rated California’s environment for oral care of older adults as “poor” (47.9 out of 100) based on rates of edentulism, water fluoridation, Medicaid coverage, Dental HPSAs, and having a state oral health plan.⁴⁰

Long-Term Care Dental Delivery in California

Interview Profile

Interviewees included 21 key informants, eight from the LTC industry and 13 dental providers. Both dentists and RDHAP were interviewed. Policy makers were not interviewed directly, but did take part in follow-up phone conversations and email exchanges regarding specific policy and program questions with representatives from Delta Dental of California and the Denti-Cal program office. The LTC interviews included representatives from SNFs, ICF/DD, and assisted living facilities. The dental provider interviews included solo providers, those working in groups, non-profit and corporate settings, and a mix of Denti-Cal and private providers.

Need for Oral Health in Long-Term Care

The interview respondents universally described the oral health status of the residents in LTC settings as challenging to maintain. Patients who are more functional may be able to care for themselves; however, as they decline, and particularly if they have medications that exacerbate oral problems, or cognitive decline from dementia or Alzheimer’s, the oral care can become very challenging. Providers reported less than ideal situations when they start at a home *“The state of health very typically in LTC, is poor in aesthetics and what I would look at as supervised neglect or even abuse, depending on how decayed everything is and going in, what I find generally we’re doing is just trying to bring the oral health to some sense of normalcy*

and stabilization” (CA2I) It was often reported that individuals arrive to LTC facilities with previous dental neglect that needs attention, while others arrive mostly healthy but then may decline as their ability to manage daily care lessens. “What seems to be consistent is that they come in to a SNF and their teeth rapidly deteriorate and partly I think because of the deterioration of general overall health but its partly due to the environment of the SNF and the patients inability to care” (CA2D) In the past dentures were the primary need, but LTC residents today have teeth to care for, as one long-term dental provider noted he sees “full dentition now, patients with implants. Which, 18 years ago we didn’t have that. When you saw patients they were maybe 60-70% edentulous. Now, it’s like maybe I would say 40%” (CA2B) Those providers who serve LTC homes over a longer time did report improvements in oral health of their patients, although not to the extent you would expect of a healthy patient in a private office.

Workforce Summary

Delivering oral health care services to residents of LTC facilities is a multi-disciplinary and multi-sector effort. As one care home director stated *“It’s really an overall effort of the whole team, the facility, the dentist, CNAs, nursing, to make sure their dental care is provided”* (CA1E). While this teamwork can be a great asset when it works, making it work can be very difficult due to the traditional silos that care providers work in; a lack of awareness about the importance of dental care by the LTC staff; and a payment mechanism designed for dental service providers as individuals instead of teams. The result of this is that *“care becomes disjointed, so the challenge is how to eliminate those, how do you bring everyone together so that it’s not so disjointed, because you can’t get the information necessary from the clients themselves”* (CA2I).

The team that works on providing dental services in LTC facilities in California consists of patient, family, nursing staff, nursing aides, social workers, and dental professionals. California’s dental workforce includes general and specialist dentists and multiple allied provider types. It is unknown how many providers work in LTC settings, and our own research as well as our interviews confirmed that there is no known source of data on the workforce or provision of care specific to these settings. However, the interviewees indicated that the numbers are likely very low. In any given community, most individuals knew the other dental providers working in this arena, if there were any.

Dentists who worked in LTC facilities reported that they worked alone or sometimes with an assistant or technician, less often directly with a hygienist. California allows the independent practice of dental hygiene through licensure of the RDHAP who are billable providers allowed to work in LTC setting.¹³ RDHAP training and practice has evolved with a clear focus on providing dental hygiene services to LTC residents and many RDHAP work independently in this sector. According to the Dental Hygiene Committee of California, there are 604 RDHAP licensed in the entire state.

The LTC nursing and care aide workforce are critical for the delivery of daily mouth care and ongoing

assessment and monitoring of resident's oral health. The perception of quality of this daily care varies widely. *"The nurses, nurse aides, and care provider are getting paid the least amount for the care provided. So basically, oral care is not high in the list right? It's more important to keep the people looking good, smelling good, and keeping the environment looking good."* (CA2F). Physicians can provide ongoing orders as needed, and depending on the environment, nursing staff may help with coordination of medical with dental care.

The dental professionals we interviewed noted that they depend heavily on the social services workers for helping to coordinate all aspects of the care, from alerting the providers when a resident needs to be seen, to determining eligibility under Medicaid, getting other health services coordinated (Medicaid pre-orders for example) and then for arranging the time and space needed for care to be performed onsite. Some dental providers had assistants that coordinated on the dental side as well. *"They [social worker] will communicate to the lead, wants of family, presentation, the problems with patients. And they will accompany getting consent and getting contact numbers to help me get in touch with families also."* (CA2B) In many of the care homes, the social worker interviewed was the point person for this service, along with other ancillary services such as podiatry and optometry. *"Some are really up on their job... and others, there not as much on it. Social services director will not only have that job, they'll maybe be an admission coordinator, they wear a number of hats and it makes their job a little harder. Some facilities see a dentist more as a necessary nuisance."* (CA2D)

Our interviewees noted that all of the LTC workforce roles were critical to ensuring a good focus on oral health, but that this was challenging due to turnover and mismatched priorities. *"So it's a big communication and implementing a whole system of care between all the players. It take a long time to get it right... it doesn't happen overnight... the hygienist has to try marketing that and communicating with all of the staff, nursing, social workers, director nurses and doing the department of social service consent forms, and when there are changes, we need to know."*(CA2J)

Workforce Training

Although California has an abundance of resources in the dental schools for geriatric training, this type of training is not tracked or required, and there is no way to know how many dentists have special care or geriatric dentistry training, or the relationship of this training to practicing in LTC settings. With the exception of RDHAP, who are specifically trained in geriatric patient issues as part of their coursework, most of the providers interviewed had no formal geriatric or special need training. Some pursued further education on their own time, while others learned on the job. Almost universally however, the providers felt that more training requirements would be beneficial. One dentist summed it up *"Geriatric, special care dentistry needs to be a specialty in dentistry, residency trained, not fellowship trained.... At the fellowship level, you don't get a lot of clinical training, it's generally in the realm of leadership, research and program development.... Who's going to treat the patients?... Because we have geriatric patients who have intellectual*

disabilities, we have geriatric patients who need complete care. We need specialty training, then after credentialing, we need ADA recognized to be ideal.” (CA2F)

On the LTC side, the well-documented deficiencies of basic training for CNAs were repeated in the study interviews. *“Vocational nurses, registered nurses, when it comes to dental care there a lot of staff and little knowledge on what to do... most of them have no desire of performing any oral health care and that’s the downside of what is happening.” (CA2C)* Although all the providers interviewed provided in-service trainings on oral health, the turnover of the daily care staff was universally seen as a challenge. Where the systems seemed to work best is when the nursing and LTC administration prioritized oral health. Where they did not prioritize oral health, trainings were not mandatory and oversight of oral health care related issues was poor. Interestingly, California regulations require that a dentist develop training; however, some homes reported being cited by state regulators for having an in-service on oral health care provided by RDHAPs. In response to this requirement one respondent noted, *“I can tell you that is laughable. I do not see any dentist going into a nursing home to provide an in-service. Title 22 needs to be changed.” (CA2L)* In order to meet the regulatory requirement in a pragmatic way, it was reported the care homes are now ensuring the trainings are “dentist” approved even if they are administered under a dentist’s order by the RDHAP.

Payment and Financing

In California, payment for dental care for residents of LTCs is primarily by the patient, either directly (cash payment), or through private insurance coverage (billed directly by the provider, or reimbursed to patient after a cash payment) and though Denti-Cal payment billed by the provider. In cases where a medically necessary dental treatment is not covered by Denti-Cal, it can be billed through the IME process, or shared costs. This process requires the cooperation of the facility, which doesn’t always want to use the money for those services. The patient must have some available financial resources; however, if the patient has no ability to contribute financially, IME is not available. Nursing homes are not required to pay for dental care, only to facilitate getting it done. *“Usually it will be covered by the insurance and whatever else is not covered which is always kind of a gamble. We’ll have the social worker take care of that for now. But I know in the future it’s going to get where the home will partake in that as they have in other things that usually were fully covered. So I’m kind of anxious if that happens because it’s kind of not in the budget” (CA1G).*

Approximately half of dental providers interviewed reported that they did not accept Denti-Cal patients, but rather they served private pay or insured elderly who were homebound, in assisted living, and sometimes SNFs. These smaller, mobile practices were financially sustainable, and in some cases highly profitable, depending on the overall clientele and business model. One of the providers who works in a solo mobile practice summarized, *“I think you could make a decent living if you saw 2 to 4 patients per day, 4 to 5 days a week and you worked 40 plus weeks. Figuring that you’re earning about \$400 a visit. You could make a decent living but you know we got DDS after our name... you want to make the most of it... ” (CA2F)*

Administrators in assisted living as well as dental providers noted that clients of these types of practice usually have families who facilitate payment and care for the elders who are being served. It was noted that a market of well-off, and not yet completely disabled, elders who need mobile or home care services is definitely a small but growing market for dental care.

The larger and more difficult market to serve comprises patients who are in SNFs and covered by Medicaid. California provides comprehensive adult dental benefits for Medicaid populations that include a large percentage (60%+) of the LTC population. In theory this should facilitate access to care, but interviewees cited the Denti-Cal program itself as highly problematic. One LTC administrator summed up her frustration saying *"I think that most of our struggle is really the whole Medi-Cal hold up and waiting on the TARs and then the denials and having to resubmit again... really not with the company we use. It's just the whole Medi-Cal thing in itself. There are times when the services that are needed can be done here and then we have to do the referral to... hospital dentistry. That's kind of a tricky process."* (CA1C)

Interviewees cited multifaceted barriers posed by the Denti-Cal program: 1) payment level is very low, *"Cause they (Dent-Cal fees) are so low, the fee for an exam is the same as it was when I started doing this 20 years ago and what industry are you getting paid the same or less than you did 20 years ago?"* (CA2D). 2) A lack of transparency exists of what is covered and under what conditions coverage applies. RDHAP can bill only under five codes, but in order to provide adequate care RDHAP must do more than is billable. Animosity between providers is caused by Denti-Cal policy, and RDHAP feel limited in what they can bill for. Dentists are frustrated that the policy is not always evenly applied, *"for hygienists, they can clean teeth in patients four times per year so they play by a different set of rules in a skilled nursing environment"* (CA2D). 3) There is a requirement for a second consultant dentist exam in order to get treatment authorization in most cases except for emergency extractions, exams, x-rays, and a few other things. *"In the meantime the patients are complaining, the families are complaining, patient is losing weight, they can't eat, etc. That burden of sending for preauthorization and waiting until the approval comes back just stretches out beginning their dental care to the most vulnerable population base really."* (CA2G) Previously, RDHAP were exempt from needing this extensive preauthorization for preventive care; however, the Denti-Cal program recently proposed a new rule that would institute a pre-authorization requirement of mandatory x-rays (a procedure for which RDHAP are not reimbursed) for periodontal services, causing further consternation among these providers that the program is not evidence based and further limiting access for SNF residents. 4) Providing dental care to the LTC facility takes extra time, managing special needs patients takes extra time, and although Dent-Cal does pay for a facility visit (D9410) of \$20 per patient per day, the low reimbursement for care combined with the high level of effort and special training needed is not enticing for most dental providers.

Despite the extensive comments from both dental and SNF interviewees regarding problems with the Denti-Cal system, most dental providers reported that they were able to make their LTC dental practice

financially viable, achieved in a number of ways. Cross-subsidizing dental care in LTC facilities through payer mix helped some providers make up losses from Denti-Cal patients, while other providers cross-subsidized at the business level by combining dental services with medical or podiatry services for sustainability. Other dental providers are cross-subsidized by having a nursing home practice only one to two days a week and seeing patients in an office the rest of the time. Providers based in Federal Qualified Health Centers are paid by visit (at a negotiated encounter rate) and not by procedure. These providers reported that the care could be financially viable if the rate was adequate, particularly for just providing palliative care. *"You're not going to get rich doing it.... It opens up your world in terms of flexibility, being able to have a more varietal career path"* (CA2L). All of the providers felt that it was a unique person who was drawn to this work for primarily personal reasons that have nothing to do with money. The challenge is to make it work financially so the provider can benefit from the other less tangible returns they get on their practice choices and without too much suffering from the poor ergonomics and other challenges of the working conditions.

Organization of Care

Lack of universal data on the dental workforce or care provision in nursing home or LTC settings restricts ability to quantify dental care delivery in LTC facilities and to describe how it may be changing. However, the interviewees universally reported that while still a challenge, new modalities and business models have enabled a scope of dental care for LTC residents not possible in the past.

Providers who accept local LTC and SNF residents to their private offices for care tend to be personally motivated to do this work and have adapted their practices to accommodate special needs patients (wheel chairs) and often have hospital admitting privileges. In cases such as these, much of the triage and coordination of care falls on the nursing home staff. One of the LTC facilities who had this arrangement explained, *"We have two dedicated drivers as well that both are [health] aides and drivers that will drive people to appointments"* (CA1B). Another stated, *"You have to bring usually it's two staff for each client. And then you're talking 4-5 hours of man time, sitting, waiting for the client to be done with the procedure. It's expensive on top of everything else."* (CA1H).

The majority of our interviewees utilized a mobile or portable delivery model. Dental providers have much flexibility in how they organize these practices: some have their own full time mobile or onsite practice; others have a brick and mortar practice and do the LTC home work part-time; and others contract with large companies who organize the care logistics for them, allowing them to focus on the dental work. Some dentists employ hygienists while others work collaboratively with RDHAP; and most also employ dental assistants when providing care in LTC settings. One LTC administrator stated, *"I kind of think that's the wave of the future to be honest because space is such a premium here. We have high occupancy and high need for every little bit of space... having it come in from a mobile perspective is just all the better"* (CA1B).

While portable equipment and electronic record keeping have helped significantly in enabling these services and does cost much less than a brick and mortar facility, the upfront investment is still significant. *“For a long time I didn’t even take x-rays because there wasn’t equipment but I do now have a NOMAD and a digital x-ray sensor, but it’s going to take an eternity to pay it off at Medi-Cal’s fee for x-rays. The sensor alone is \$10,000...the NOMAD is \$7000. And Medi-Cal pays you \$3 per x-ray.”* (CA2D).

All interviewees reported that scheduling and logistics were ongoing challenges, and each interviewee had worked out a unique system that worked for their particular business model. *“So that [communication plan] keeps my recall system rolling, so that say you have an average of 30-40 cleaning patients per facility. You can pretty much run and figure your income from that facility would be 30 cleanings. And then you can plan for three months, and we schedule them for three months and at the first of the month get the EVC of those patients that we know are still there... a full day... pays well.”* (CA2J). Operational scale was described as both a rate limiting factor and an opportunity. For providers in solo or a small business model, they only schedule and bill at a few sites as they manage all the administration themselves. Providers working in larger organizations reported centralizing scheduling and billing across many providers to make it work. *“It’s like the U.S. post office delivering mail. Again, you have to have a really good handle on your geographic spread of facilities... if you were to ask a provider to go to one facility in the morning and then another three hours away it just ruins your day. A lot of it is just experience.”* (CA2G)

The most unique aspect of LTC dental practice in California is the collaborative practice model between dentists and RDHAP. Despite the ongoing intra-professional conflicts in the policy arena, most providers described the collaborative practice between RDHAP and dentists as positive. *“I work with the RDHAP and we share patients so I may do an initial arch debridement if I’m first to see the patient, but then I almost always get them hooked up with an RDHAP because they can provide more that ongoing care.”* (CA2F) Another dentist noted, *“Once the doctor has determined that there is periodontal treatment that needs to be at least assessed if not performed, then it’s up to the hygienist to step in at that point and right now we are relying heavily on the RDHAPs and we value their independence... they come up with their own care plan at recalled intervals”* (CA2G). RDHAP are billable providers, and because of this they do not generally work under a dentist’s employment, but as a contractor or sole proprietor who bills patients or insurance directly. RDHAP also provide care coordination services, as one RDHAP notes, *“I have brought [dentists] into all of my facilities, I am the one that brought the dentist to the facility...”* (CA2L) Nursing home administrators who were interviewed liked the fact that they receive regular prevention and referrals, and saw the collaborative model as serving their facilities very well.

Regulation and Accountability

Despite LTC facilities and SNFs being the most regulated sectors of the health care industry, interviewees expressed dismay in the lack of accountability for the provision of oral health care in these settings. Title

22 regulations stipulate that a dental contract be in place and that needed care be provided, but does not track that the care was actually done or the appropriateness of the care. In California, the contracts between LTC settings and dental providers are simply to ensure all licenses and liability is up to date. The contracts do not stipulate terms of care provision or accountability. Regulators check to ensure a contract is in place, but do not inquire into the oral health status of the patients or their utilization of care. The only available data on the oral health status of patients that is uniformly collected is the Minimum Data Set (MDS), which is federally regulated for all skilled nursing facilities. The oral health status must be documented within 14 days of admission, but not necessarily through an exam by a dental professional. Interviewees reported that in some arrangements, the contracting dentist will do the exam for the LTC facility, but the majority of the time it is completed by the nursing staff, and rarely within 14 days as required.

In general, the dental providers felt the nursing and health care aide staff did not do an adequate job of daily mouth care, struggled with their own ability to provide professional care, and the nursing home staff felt that securing dental care was too difficult. *"It's just the constant feeling of having to compromise because it's in almost all aspects... a compromise from what we've been taught. I learned how to do dentistry in a certain way and you have standards for yourself and in a SNF. Almost never can you reach those standards... you seldom get anything that is 100% cooperative. When you do you rejoice."* (CA2D)

The interviewees felt that the entire delivery system is not set up for success because it is not designed with LTC patients' dental needs in mind. *"Not every patient can be treated the same way and definitely cannot be treated the same way as they are treated in regular offices... Denti-Cal does still cover these patients in SNFs but they cover them under regulations that are designed for people outside of SNFs....the whole dental care [system] needs to be reevaluated and looked at again from the point of view of what are the actual needs for this population of this type of patient."* (CA2K)

A key reason emerged from the interviews for this system dysfunction. The interviewees reported that there is a lack of standard of care for dentistry in LTC settings. Without that, payment, regulations and, care delivery all vary by personal preference and legal parameters. *"There are no process standards in place, no protocols, no standards of care... Standard of care is based on the individual provider's standard of care and what basically the market will bear."* (CA2F) Interviewees felt that Denti-Cal was overly focused on fraud prevention or cost savings, and not thinking about how to facilitate the specific care needs in this population. In some cases regulations and payment do not align resulting in the creation of unfunded mandates. *"We are supposed to have yearly exams and because of the funding issue, they kind of backed off on that. But it's actually in the federal regulations because we are funded by Medi-Cal, our regulations come from Title 22 which I believe it says a yearly dental exam... but because they require surgery, Medi-Cal is only going to pay once every 2 years."* (CA1H). Another example is what happens when patients go on hospice they lose dental benefits *"so the patients can be on hospice for years and now in California, a lot of these patients*

have teeth and we receive multiple requests from families, from the medical staff, to treat those patients and do cleanings for these patients. We can't write the off the books while they're still alive right?" (CA2K)

California Case Summary

Key findings from the California Case Study point to promising new models of care emerging to treat LTC populations.

- Active advocacy groups focus attention to dental care issues in nursing facilities at the state policy level, and the RDHAP workforce is focused on expanding care in LTC settings in their individual communities.
- Collaborative systems between LTC facilities and dental providers work well when in place; however, these efforts are challenged by LTC staff turnover.
- An emerging collaborative practice model between dentists and RDHAP works very well to balance regular preventive care needs and dental exams and treatments, but is not well supported by payment policy.
- A statewide training mandate and training resources for daily care staff on oral care for LTC residents now exists, although implementation of the mandate and measurement of staff competence are unknown.
- In California, dental practice in a nursing facility can be financially sustainable, even when treating Denti-Cal patients.
- LTC facility administrators universally expressed satisfaction in working with dental care providers that bring mobile services to their homes on a regularly basis, which most interviewees had in place, as well as a perception of positive improvements in oral health status of residents once regular dental care is available.

Many challenges remain:

- A lack of care standards from which to design policies and programs in the state for this population created policy primarily focused on fraud prevention rather than assurance of high quality care provision.
- A lack of comprehensive, appropriate and adequate funding sources for dental care in Medicaid and Medicare.
- A decrease in geriatric dentistry training opportunities due to loss of HRSA funding for these fellowships and no requirement for any specialized training to work in these settings.

- A lack of data reporting number of LTC residents who are actually getting care, what percent of care homes have regular care contracts, and relative performance of different models.

CASE STUDY 2: FLORIDA

State Overview

Florida is the third most populous state in the U.S., with a total population estimated in 2014 at 19,893,297, 19.1% (n=3,790,954) of whom are aged 65 and older.¹⁵ Florida has the sixth largest population of elders living in nursing homes in the U.S. and also ranks sixth in the number of nursing home facilities, with a total of 679 facilities. The majority of these, (70.7%) have 100 to 199 beds. Eighteen percent (n=125) have 50 to 99 beds, and the smallest facilities and the largest share the rest of the market almost evenly with 5.7% (n=39) facilities contain fewer than 50 beds and 5.2% (n=35) contain more than 199 beds. Florida is in the lowest quintile of states when ranked by beds per thousand people age 65 or older and beds per thousand people age 85 or older.¹⁰

Dental Supply, Education and Workforce

Florida is estimated to have 8,988 general practice dentists, 248 HPSAs and 223 DHPSA in the state.^{16, 17} Florida has two dental schools that graduated 208 dentists in 2014.¹⁸ A third dental program opened in the state, and the inaugural class graduates in 2016. None of these schools have a specialty focus in geriatric dentistry; however, dental students can do rotations in a nursing home setting.

- The University of Florida College of Dentistry offers DMD degrees and dental specialty residencies. The school offers a handful of day-long continuing education courses in geriatric dentistry in any given year,⁴¹ but does not offer a formal geriatric training program.
- The Nova Southeastern University College of Dental Medicine is a private school offering DMD degrees and specialty residencies. No specific training in geriatric dentistry is offered at the school.
- The Lecom College of Dental Medicine is expected to graduate its inaugural class of DMD students in 2016. The school is not currently offering advanced education, continuing education, or any degree or certificate program in geriatric dentistry.

Florida licenses dentists and dental hygienists. Legislation was passed in 2011 that allows dental hygienists to perform preventive procedures, without a prior examination by a dentist, in “health access settings” that includes nursing homes and other senior settings. In addition, under a change to the scope of practice in 2012, dental hygienists with additional training can now obtain a license to practice local anesthesia. Separate licenses are available for various settings or practice types, though none of these are specific to LTC. These licenses include Health Access Dentists, Limited Dentist License, Limited

Dental Hygienist, Dental Residency/Intern Permits, Dental Teaching Permit, Temporary Certificate, and Dental Expert Witness Certificate. Dentists may also obtain permits for sedation using general anesthesia, conscious sedation, and pediatric conscious sedation. Dental Assistants carry a certificate, but are not licensed in the state, though they may become licensed as Dental Radiographers.⁴²

Table 5. Counts of Dentists by Specialty: U.S. vs Florida¹⁶

Location	Dentist Type (15)							Total
	General Dentist	Endodontist	Oral Surgeon	Orthodontist	Pedodontist	Periodontist	All Other Specialties	
United States	167,960	5,417	7,336	10,583	7,059	5,759	6,073	210,187
Florida	8,988	369	432	565	372	404	405	11,535

Critical Policy Factors

Nursing home facilities in Florida are subject to few regulations beyond what is stipulated under federal regulations. The regulations include: 1) requirements that facilities maintain policies and procedures related to dental services; 2) facilities that participate in Title XVIII or XIX follow the guidelines set out for those facilities and; 3) facilities housing children under age 21 contract as needed for pediatric dental services.⁸

Under the Affordable Care Act (ACA), Florida has not adopted the Medicaid expansion²⁹ and offers only coverage for dentures and emergency services for non-pregnant, non-disabled adults.³¹ For residents of nursing facilities, dental care may be covered as an incurred medical expense when medically necessary and when patients meet the criteria for use of this mechanism.¹¹

Medicare beneficiaries make up 19% of Florida’s population.²⁷ Medicare Advantage uptake in Florida, 40% of all Medicare enrollees, may or may not cover dental care.¹⁸ There is no state level tracking mechanism for dental services that are being provided specifically to institutionalized elders in SNFs or LTC settings. As a result, it is unclear how many individuals are receiving dental care.⁴⁰

Statewide Support and Advocacy

The advocacy organization, Oral Health Florida, has an internal senior advocacy group called the Senior Action Team, which comprises more than 20 representatives of organizations, including Florida Dental Association (FDA), Florida Dental Hygiene Association (FDHA), Florida Health Care Association (FHCA), Council on Aging, Department of Elder Affairs, Florida Medical Directors Association, Florida Association of Directors of Nursing LTC (FADONA), Leading Age, the University of Florida College of Dentistry, Nova Southeastern College of Dental Medicine, and Prev-Med Mid America Health. The action team monitors the ADA’s role in the provision of oral health care to the elderly, especially those in LTC facilities, and is chaired by a consultant to the National Elder Care Advisory Committee to the ADA. The support of the

National Elder Care Advisory Committee was integral for the development of a CE course that trains licensed dentists about interacting with and providing care to patients in nursing homes.¹⁴ The action team advises Oral Health America (OHA) about programs available to treat the elderly in Florida, including a Wisdom Tooth program focused on education around provision of care to the elderly. The action team also works with corporations that contract with nursing homes to provide oral hygiene and dental care to residents. Despite these efforts, Oral Health America rated Florida's environment for oral care of older adults as "poor" (33.6 out of 100) based on rates of edentulism, water fluoridation, Medicaid coverage, Dental HPSAs and having a state oral health plan.⁴⁰

Long-Term Care Dental Delivery in Florida

Interview Profile

Seven key informants were interviewed in Florida; three from the dental provider side, three from the LTC industry side, and one in a policy position. The interviewees included three women and four men; two were dental hygienists, three work in research and advocacy settings, and one was an executive in a large corporation that provides mobile dental care in LTC settings. A director of nursing at a nursing facility was also interviewed. Three of the interviewees are clinicians and four are not.

Need for Oral Health in Long-Term Care

All of the interviewees noted that dental care is needed for the LTC population; however, it is difficult to provide this in LTC settings and often patients in these facilities are difficult to manage. *"We're talking about people at the end stage of life. Their oral conditions are in pretty bad shape because they lack the mental capacity or even the physical dexterity of brushing their teeth on a daily basis."* (FL1C) Providers reported less than ideal situations when they begin treating at an LTC home. *"A big chunk of the Medicaid population in particular might go 15 or 20 years before they enter the nursing home with little or no professional dental care because they're on a fixed income and that's one of the first things to go. So, now you find people walking in the door of the nursing home at age 80 or 82 ... and they're walking in with a mouthful of unresolved and delayed treatment issues that should have been addressed a long time back."* (FL3A) Unfortunately, most providers reported that the care provided by staff in the LTC facility was often ineffective or insufficient to maintain the level of oral health that patients had when they entered the facility. *"I am disappointed that sometimes a month later [after a hygiene visit] [the patients] look worse than the month before. I find it appalling, but I understand. The nursing staff is spread so thin, and they are not properly trained on how to provide oral healthcare for the patients."* (FL2A) Despite the challenges of daily mouth care, respondents did report that access to care for residents is better now than in the past. *"More than 20 years ago, it was impossible to find a dentist who would either come into the facility or accept patients into their practices. That's gotten considerably better. Here in Florida, there are a number of insurance related dental programs that are*

able to go into the facilities. They got dental hygienists cleaning teeth and dentists who go in. Some mobile operations that go around that are able to provide care to the patients in the nursing homes. It's certainly improved over the years." (FL1B)

Workforce Summary

Within each LTC facility, nursing staff, social workers, patients, and their families each bear some responsibility to ensure completion of daily mouth care, as well as, for coordination of care by dental professionals. *"The social worker...would make arrangements, whichever dentist would be available in the area for nursing homes. The CNA [is] responsible to make sure that ... [residents are] getting their mouth care daily,... and if they have dentures...they would have to remove them at night, if the residents allowed... But all the staff is trained in mouth care...We try to involve the family. If they see something that we're not aware of, to notify us immediately, don't wait until weeks later,...and some residents are quite willing to just say, 'well, that tooth has been bothering me for years and years, let's just take it out.'" (FL1A)* More than one interviewee reported that LTC facility staff is often unwilling or unable to provide daily oral care. *"I can't tell you the number of nurses' aides who would say things like, 'I tried brushing Mr. Smith's teeth, and the first day he kicked me. The second day he bit me. And the third day he spit on me, So, I'm just not trying anymore.'" (FL3A)* In LTC facilities without mobile dental providers, *"90% of [families] were only relying on the nurses, like CNA staff, to provide the oral care." (FL2A)* One respondent noted that in *"the best situations... there's a few nursing homes—and not many can afford this, but a few will have a hygienist that's actually on staff part-time. And that hygienist will go around, and see residents, and help clean teeth, and help take that load off the nurses' aides." (FL3A)*

Interviewees also report that in LTC facilities where dental care is provided by mobile dental professionals, care is more reliable for patients than in LTC facilities where the families are the primary arbiters of care. Professional delivery of oral health care services for residents of LTC facilities in Florida is greatly restricted by the lack of Medicaid benefits beyond emergency care and dentures. This absence of benefits has led to a system in a silo. Dentists are called in to assess patients for these specific services, and then provide a prescription for hygiene. Hygienists are allowed to work independently from dentists based on a prescription authorizing oral prophylaxis (cleanings) for a period of up to two years at a time. This structure results in minimal collaboration between the two provider types in the LTC setting. One hygienist noted that in ten months in a mobile dental care company she had only "crossed paths" with a dentist twice. (FL2A) Another provider who works across several states in LTC settings noted that hygienists' ability to work independently from dentists is very good for the residents themselves. *"You can't imagine how much benefit that provides to these nursing home residents. In other states, they don't do that. It's a struggle, and the patients, honestly, their level of care is less." (FL1C)* It is unknown how many of Florida's dental providers are working in LTCs, but it was seen as a growth area and a large need.

Workforce Training

Little formal opportunity for training is available in Florida for dental professionals wishing to focus in LTC settings or geriatric patients. Those dental professionals working in these settings tend to be internally motivated to care for elderly patients. *"All of the hygienists ...that are employed by our company have a passion for providing care for individuals. They enjoy working with elderly people for whatever reason and [are] extroverted, kind of like come into the facility and [say], 'Okay, I'm going to do whatever I need to do to take care of your teeth today. You're huddled over in a wheelchair and I've got to kneel on the floor to see you, then that's what I'm going to do'"* (FL2B). A handful of respondents reported that many of the dentists involved in provision of care to LTC facilities are semi-retired and interested in advocating for geriatric care. Very few new dentists were reported to be working in LTC settings on a full-time basis, and uptake of geriatric dentistry training opportunities through professional groups such as Oral Health Florida was reportedly low. Respondents universally expressed that there is room for improvement in geriatric training for dental professions. *"I had to learn a lot and read a lot to find out issues on working with a geriatric population I think that's huge weakness in our education model right now."* (FL2B)

Although some hours of training in mouth care are required for certification as a certified nursing assistant (CNA), no respondents voiced that this training was sufficient for the needs of the patient population, and several voiced frustration with turnover in nursing staff requiring constant training. It was often reported that nursing staff didn't know how to clean mouths in order to target most of the bacteria, and that staff did not know how to clean and maintain dentures, even for patients who are cooperative. *"[Nursing staff] will throw away my partial denture brush. And then they'll just have a disposable toothbrush that they'll be using to clean that partial or denture. And I'm thinking, you can't really effectively clean it as well when you're just using a disposable toothbrush compared to an actual denture brush. But, they don't even know what it is."* (FL2A) Increasingly, efforts have been put into training LTC facility staff on residents' oral health needs. One mobile dental provider has collaborated with the American Medical Directors Association (AMDA) in an effort to develop a model to train nursing facility medical directors on proper oral health care for patients. (FL2C) That company and others have begun to work with the facilities to train the daily nursing staff on oral health care, though not all companies are providing this type of training. One hygiene provider described the training that she is working to develop as one in which the focus will be on *"the guidelines of what my company is encouraging. We'll be talking about the care the different types of toothbrushes. When [nursing staff] do brush, they never get to the gingival [levels]. They don't even realize that that's where the majority of plaque and decay [occur]."* (FL2A)

Payment and Financing

During 2013 and 2014, Florida converted all Medicaid recipients, including those in LTC facilities, to a Statewide Medicaid Managed Care (SMMC) program. Currently, individuals in institutional settings receive

care from two separate programs. Acute and primary care services are provided through an SMMC, and LTC services are provided through HMOs and Provider Service Networks (PSNs) through a LTC Managed Care Program. Dental services are covered under subcontracted dental plans.⁴³

Nursing facilities in Florida are permitted to use the IME system to pay dental providers for regular preventive and needed treatment services for eligible adult residents to cover the gap in Medicaid dental coverage. IME allows reimbursement for dental services at usual and customary rates, but even with this mechanism, providers report that oral health care provision in LTC settings is a struggle. *"It's almost our charitable division because we really haven't been able to make it work on a positive cash flow basis. Or nursing home division is funded almost on the success of other divisions. We think we can get there, but it's incredibly difficult in the environment, and, obviously, the patients are high-need."* (FL1C) IME has advocates and those who see need for caution; however, all of the providers interviewed in Florida were clear that dental care delivery cannot be provided in the black on Medicaid alone. *"The only way this model makes sense, the only way you can deliver dentistry in nursing homes is with some kind of supplementation funding, by way of private insurance or grant funding because the Medicaid dollars are just not there."* (FL1C)

Workforce members in LTC facilities also noted that their primary challenge in providing dental care for residents was in financing. When the residents need professional dental care, the primary challenge is *"probably monetary...--because we're regulated by the state and dental care is one of the things that they look at really very closely...so sometimes that means the facility would have to, maybe, assist [financially]."* (FL1A) Patients who have no assets and no private insurance coverage are largely left with few options outside of charity care. *"The people that just don't have any money, they're in a very bad situation. It's difficult to find someone who will take those cases on and do pro bono work. Because we're running a business, we have to be aware of the fact that you just can't keep giving services away because dentistry is expensive."* (FL2B)

Organization of Care

Respondents describe the Florida LTC landscape as dominated by large chains of nursing homes. *"There are very few independent nursing homes anymore. They're all a part of a larger chain, and some of those are multiple chains under one ownership."* (FL1C) LTC facilities prefer to contract with a handful of providers who can serve all of their residents across multiple facilities. As a result, mobile dental providers appear to be large employers with staff covering wide expanses of territory to serve a number of nursing facilities. One provider described providing care at eight different facilities for approximately 200 patients in three different cities. (FL2A) Another described being employed by a dental health provider that works in more than 150 different nursing homes all over the state of Florida. This provider reported that the farthest distance personally traveled to provide care in LTC facilities was 96 miles round-trip. (FL2B)

There are multiple dental insurance products available for residents of LTC facilities in Florida, and cooperative patients with private insurance or other personal means to pay cash can be transported to a dental office for care coordinated by their families. For patients without access to care outside of the facility, or those who just prefer to have services in-house, a handful of companies structured as both plan and provider now provide care to several locations of large LTC chains. That is, the dental provider sells both the insurance and provides the dentists, hygienists, equipment, and supplies needed for care in the facility. *"You have companies that go in [to the facility], and they have their license—licensed insurance agencies because it's an insurance product. They'll go in and sell the premium. They take these insurance agents, and they go into the facility as the provider, set up the full dental operative there in the nursing home, and provide the services."* (FL3A)

Mobile dental provider companies see a full payer mix in the sites they serve. *"The core patients ...are the ones that are enrolled, and then we [treat] all the others – liability and Medicaid. So we treat the entire home. Some patients, we see on a monthly basis. Some we see on an as-needed basis. But the dentist goes in and does a full building assessment on an annual basis, because that also assists the home in passing its state audit."* (FL1C) The hygienists interviewed reported that most of the care they provide in accordance with their scope of practice is preventive in nature. *"I do the dental oral prophylaxis (cleaning), provide all the supplies that they need, toothbrushes, rotary toothbrushes, if they dentures, denture brushes, denture adhesive, denture cleansing tablets, toothpaste, floss, inter-dental cleaners, just whatever they need to provide their dental care."* (FL2B) It was thought that dentists provided simple extractions and fillings at the LTC facility, but *"if it's requiring dental laboratory work,... the dentist would take the impression, take the partial or denture, and ... have the repair done. It generally takes a whole month because he's working on his schedule, a month at a time, so the patient is going to be without their denture or partial for a good month."* (FL2A)

Some concerns have been raised with respect to the value of the services provided by the large dental companies. *"There are different insurance companies, and I think they're doing a wonderful job in terms of providing a full array of dental services and doing it at a reasonable cost factor. But, there's a couple of copycats in Florida. There is one in particular that's charging [more than double other companies] per month and doing far less in terms of services."* (FL3A) As these organizational models spread to other states, facilities, families, and insurance regulators will need diligence in order to ensure that residents receive the care they need beyond the bare minimum required by nursing home regulations.

Dentists who come on-site still must refer the more complex or surgical care for the simple reasons that a surgical environment cannot be established ad hoc in an LTC facility and not all types of equipment can be brought into a facility. As a result, sicker patients and those with more limited finances may face greater challenges to find the care they need. In addition, patients without private insurance or without adequate means to participate in another dental insurance vehicle, such as a Medicare Advantage program with dental coverage, must rely solely on the daily oral care provided by the facility's nursing staff. This is all

too often inadequate to maintain oral health. *"Internally we have our own studies. We have thousands of patients, and we know that about 87% of the patients we see on a monthly basis have had no oral intervention since we had seen them on their last visit."* (FL1C)

Regulation and Accountability

Respondents reported varying experiences of regulation based on their role in the system. Those in administration expressed that dental care has become a greater focus of nursing home regulators in Florida in recent years, though no changes in policy have occurred. Rather, regulators are asking to see evidence that a schedule exists for each resident to have an annual dental exam, and regulators will now ask questions of residents and families regarding oral health in their annual inspections. (FL1A). Other respondents expressed that *"regulatory oversight drives good cooperation between the private [providers] and the nursing homes"* (FL1C); however, they were uniform in their opinion that several gaps exist in the regulation around oral health care in LTCs. A dental provider expressed the desire that every facility be required to *"hire a dental provider that would be there at least a couple days a week...[so] that every single resident in the facility would be able to receive dental care as part of living there, just like they're eligible for rehab facilities and food and socks and diapers."* (FL2C)

Currently, daily mouth care for LTC patients provided by nursing staff is assumed to be inadequate, and patients without assets are left without access to quality oral health care except on an emergency, as-needed basis. Several respondents expressed that greater oversight and regulation are needed. *"If you go back historically and look at the number of citations there have been for dental care problems, it's very, very low, even though you know there are huge issues out there. Inspection side people could care less about the process or the economics. They're just...concerned about good care being done so that when they do their inspection, they come up good."* (FL3A) The sentiment is understandable considering the state of oral health described among participants, the lack of training for daily care staff, and the dearth of regulations designed to address these issues.

Florida Case Summary

Florida case study highlights several trends to watch and one promising financing model.

- Florida's advocates and regulators have stepped up attention to the issue of oral health care in LTC settings and spurred some action to address some of the historical problems.
- The LTC industry trend toward consolidation is being mirrored by the development of larger corporate models of dentistry that can secure contract with the LTC companies and deploy staffing across a large geographic area.

- Florida is using an innovative model of dental payment through IME more extensively and systematically than has been documented in other states in order to mediate the lack of comprehensive adult dental coverage in the Medicaid program.
- Despite reported improvements in access to care for residents of nursing facilities, the poorest patients are still not receiving the care they need, nor are they receiving care equivalent even to that available to other Medicaid recipients.
- Dental hygienists are playing a vital role in the provision of prophylactic care, where they imperfectly substitute for reliable daily mouth care and work to reverse the damage that occurred prior to a patient's residency in an LTC facility.

Florida also presents some challenges for policy makers to consider as this field evolves. A state known for its robust retirement community unfortunately offers very few resources for dental care for this growing population.

- Like all other states, Florida has no available data on dental workforce coverage in relation to care needs of this population.
- Florida offers extremely limited Medicaid dental coverage providing only dentures and emergency care.
- Although more focus is being paid to the issue of senior oral health, there is minimal accountability in place for the oral health of LTC patients.
- The lack of evidence-based care standards for advocates and/or the state to use to promote best practices leaves open opportunities for dental providers to focus on extracting payment from private payers and Medicaid based only coverage rather than oral health needs.
- Oral health care provided by daily nursing staff is assumed to be inadequate and efforts to change this are patchwork at best and unsupported by regulations at federal or state levels.

CASE STUDY 3: MINNESOTA

State Overview

Minnesota's population ranks it as twenty-first in the U.S., with a total population estimated in 2014 at 5,457,173, 14.3% (n= 777,833) of whom are aged 65 and older.¹⁵ Minnesota has the eighteenth largest population of elders living in nursing homes in the U.S, yet ranks fifteenth in the number of nursing home facilities, with a total of 390 facilities in 2013. The majority of these LTC facilities (50.8%) have 50 to 99 beds. Twenty-five percent (n=100) have 100 to 199 beds, while 19.7% (n=77) contain fewer than 50 beds and 3.8% (n=15) contain more than 199 beds. Minnesota is in the middle quintile of states when ranked by beds per thousand residents age 65 or older (27.9-34.9) and is in the second lowest quintile of states when ranked by beds per thousand residents age 85 or older (222.1-269.5).¹⁰

Dental Supply, Education and Workforce

It is estimated that there are 2,857 general practice dentists in Minnesota, which translates into 1 per 1,910 people, but there are also 139 HPSA and 128 DHPSA in the State.^{16, 17} Minnesota has one dental school which graduated 109 dentists in 2014.¹⁸ The University of Minnesota has offered an MS degree or certificate fellowship program in geriatric dentistry since 1981 through its Oral Health Services for Older Adults Program, and the school is a rich resource on this topic, including a four-day "mini-residency" in nursing home and LTC dentistry, along with opportunities for longer term individual training in geriatrics and LTC through the CE program.^{44, 45}

- The University of Minnesota School of Dentistry offers a DDS degree and dental specialty residencies, as well as, Dental Hygiene and Dental Therapy degree programs. The school also offers an Oral Health Services for Older Adults (Geriatrics) training program for dental professionals, as well as, curriculum targeted at all levels including CE programs for dental and non-dental professionals. The Walker Dental Clinic at Walker Methodist Health Center in Minneapolis is also operated by the University of Minnesota School of Dentistry, which serves older adults from the community, manages over 20 LTC facilities, and provides a clinical training site for dental professionals at all levels.

Minnesota licenses four types of dental providers in addition to dentists, including: Licensed Dental Assistants, Limited Dental Assistants, Dental Hygienists, and Dental Therapists. The Minnesota Dental Board separately licenses Full Faculty, Limited Faculty, Resident Dentists, Resident Provider Dental Therapists, Resident Provider Dental Hygienists, and Guest Dentist/Hygienist/Assistant. Separate permits are required for dentists who wish to practice anesthesia and sedation.⁴⁶

Table 6. Counts of Dentists by Specialty: U.S. vs Minnesota¹⁶

Location	General Dentist	Endodontist	Oral Surgeon	Orthodontist	Pedodontist	Periodontist	All Other Specialties	Total
United States	167,960	5,417	7,336	10,583	7,059	5,759	6,073	210,187
Minnesota	2,857	86	134	161	80	66	82	3,466

Critical Policy Factors

In contrast to other states profiled in this report, Minnesota has lengthy requirements pertaining to dental care in nursing facilities relative to both federal and most state regulations.⁸ These requirements include:

- Nursing homes must provide or obtain routine dental services to meet the needs of each resident including examinations, cleanings, fillings, crowns, root canals, periodontal care, oral surgery, bridges, removable dentures, orthodontic procedures, and adjunctive services that are provided for similar dental patients in the community at large, as limited by third party reimbursement policies.
- Residents of LTC facilities must be referred for a dental examination within 90 days of admission, unless the patient has had a dental examination within the six months prior to admission.
- After this initial exam, the LTC facility must ask the resident if the resident wants to see a dentist and then must assist the resident to make the appointment, on at least an annual basis. An opportunity for an annual dental checkup must be provided within one year of the date of the most recent dental examination.
- Emergency dental services must be made available to meet the needs of each resident, including services needed to treat: an episode of acute pain in teeth, gums, or palate; broken or otherwise damaged teeth; or any other problem of the oral cavity, appropriately treated by a dentist that requires immediate attention.
- When emergency dental problems arise, a nursing home must contact a dentist within 24 hours, describe the dental problem, and document and implement the dentist's plans and orders.
- For each dental visit, the clinical record must include the name of the dentist or dental hygienist, date of the service, specific dental services provided, medications administered, medical or dental consultations, and follow-up orders.

- Nursing home care staff must be trained and competent to provide daily oral care for residents.
- The facility must maintain a written dental provider agreement with at least one dentist, licensed by the Board of Dentistry, who agrees to provide:
 - Routine and emergency dental care for the nursing home residents
 - Consultation regarding the nursing home's oral health policies and procedures
 - Oral health training for nursing home staff.
- A nursing home must assist residents in making dental appointments and arranging for transportation to and from the dentist's office.
- A nursing home must arrange for on-site dental services for residents who cannot travel, if those services are available in the community.

Minnesota has a progressive policy environment, and the state has been innovative in terms of scope of practice as well as in Medicaid payment policy, particularly with respect to those living in residential care facilities. Minnesota was the first state to open a University-based geriatric dental fellowship (OHSOA) in 1981, the first state to license Dental Therapists in 2009. Recently, Minnesota passed legislation enabling tele-dentistry. Minnesota's Medicaid program provides comprehensive coverage for adults including preventive, restorative, and specialized periodontal dental procedures along with dentures and oral surgery services for non-pregnant, non-disabled adults (30), but Minnesota has not adopted the Medicaid expansion under the ACA (28). The State allows authorization for more frequent cleanings visits for special needs patients.

Minnesota has a handful of billing codes that allow dental providers better care provision in LTC settings. The first is the Critical Access Dental Provider Program, which functions similar to the Critical Access Hospital designation and allows Medicaid to designate certain dentists or dental practices as critical to access to care for specific underserved areas or populations. These designated providers receive a higher reimbursement rate under Medicaid in order to serve vulnerable populations. Unfortunately, the higher rates were set close to 15 years ago and have not increased since then, despite increased cost in the provision of dental care. Minnesota's Medicaid reimbursement policy also allows providers to bill for behavior management, and bill a fee to Medicaid similar to a house call for travel to an LTC facility, Head Start Center, or similar location. The behavior management code exists at the national level, but not all states pay for it. In Minnesota, it allows some offset of the losses that providers incur in treating LTC residents on Medicaid. Minnesota also reimburses for partial acrylic and cast metal partial dentures in

addition to full dentures, which is more favorable to the geriatric patient who often has some of their own teeth, though those teeth might not be as strong as they once were. Without the possibility of using an acrylic partial denture, patients would be subject to having their remaining teeth pulled in order to provide a full denture, even though the removal of those teeth would not be indicated were it not for the need of a full denture.

Medicare beneficiaries make up 15% of Minnesota's population (26). More than half (53%) of Medicare enrollees participate in Medicare Advantage programs, some of which include coverage for dental care.¹⁸ It is unclear exactly how many residents of LTC facilities are receiving regular oral health care or exactly what procedures they are receiving.

Statewide Support and Advocacy

Until recently, the Minnesota Dental Association had an Elderly and Special Needs Adults Committee. The Committee was merged with the children's and rural dental advocacy committees within the last two years, and is now known as the Barriers to Care Committee (BCC). The BCC comprises members that have specific areas of expertise: pediatrics, elderly, special needs, rural, and Medicaid. The BCC is currently working with LTC representatives and nursing homes to implement their program, Growing Old with a Smile, and the Oral Care Workbook; both are focused on residents of LTC facilities. The past work of the BCC includes a paper on dental practice. Minnesota's statute on safe patient handling was published in 2011 and is available as a resource on Minnesota's Department of Labor and Industry.⁴⁷ In part thanks to Minnesota's Medicaid coverage of comprehensive oral health care, Oral Health America rated Minnesota's environment for oral care of older adults as "excellent" (92.9 out of 100) based on rates of edentulism, water fluoridation, Medicaid coverage, Dental HPSAs and having a state oral health plan.⁴²

Long-Term Care Dental Delivery in Minnesota

Interview Profile

Ten key people in Minnesota comprised the interviewee group: one dental hygienist; four dentists; two dental care coordinators; and three individuals in administrative positions in nursing facilities. Seven of the interviewees were clinicians and three were not. The dentists interviewed worked in mobile dental practices, a fixed clinic on-site at a LTC facility, and an offsite fixed clinic. The providers spanned roles in administration, clinical practice, and academic geriatrics.

Need for Oral Health in Long-Term Care

Respondents in Minnesota were generally very positive about the current state of oral health and the provision of oral care in LTC settings. Historically, providers in Minnesota had difficulty finding a dentist who could treat the frail elderly and who would accept Medicaid. But, the mobile dentistry model significantly improved the landscape. *"Prior to the [mobile model], we were required to get [patients] to a dentist. So to find a dentist to be able to [treat elderly patients] or who would accept whatever the payment was from public assistance was almost impossible."* (MN1C) Not all LTC facilities have access to a mobile service model, and those that do not have access to a mobile service model continue to have traditional problems of finding care. Respondents in urban areas reported having dentists on every block, but none would take Medicaid. Those in more rural areas reported having only one dentist, 30 or 40 miles away, who used to take Medicaid, but will no longer do so. With the mobile model, the goal is for all patients see a dental hygienist upon admission and once per year thereafter. The dentist comes monthly, and treatment plans approved by the patient's family are carried out collaboratively between the dentist and hygienist. Emergency and complex care is provided at the dentist's office, but one administrator estimates that 95% to 98% of all dental care is provided at the facility. *"We provide a full range of services on site from educational services for individuals and groups to preventive services, to diagnostic and restorative services... pretty much all of the services with just a few exceptions are provided on site year round to patients who have a dental home, you know, through our services."* (MN2A) A full complement of services is also provided at the LTC facility with the on-site fixed clinic, though occasionally emergent patients need to be seen at the practitioner's offsite location. The provider, whose clinic is offsite, reported seeing patients for regularly scheduled cleanings and for emergent care at the offsite clinic.

Respondents reported the most common reason for dental neglect as a result of patient or family choices. One respondent whose patient base includes a high number of former unionized workers indicated that most patients had very good oral health over their lifetimes including dental insurance through retirement, but that neglect set in over time. *"Sometimes the family just flat out says, 'I kept telling Dad, and he won't do it [go to the dentist].' They don't want to give up that independence although they don't really drive, they don't want someone controlling what they do."* (MN2E). Other respondents echoed this same sentiment. Regardless of the patient's oral health status upon entry to an LTC facility, respondents agreed that access to professional dental care is an important component of resident care. The dentists and hygienists who were interviewed went further. *"Much of the disease and problems we see in long-term care are pure failures of prevention due to lack of regular oral care, lack of nursing staff who are either able, knowledgeable, or have the time or energy or the problem solving abilities to do that. ...There's no way that a nursing assistant who has taken a 75-hour certification course with one hour on oral health care is going to be able to do that."* (MN2C) Another provider indicated that the dental care required runs *"the gamut of general dentistry," but the patients are more complex and require more time and patience than other Medicaid patients.*" (MN2D)

Workforce Summary

Many individuals carry some responsibility for dental care within the LTC setting, including the patient. All of the LTC facilities that were spoken with have oral health care provided by dental professionals at the facility. This model, as described in Minnesota, depends heavily on communication between daily nursing staff, the patient/patient's family, and the dental professionals. *"Nursing assistants assist residents with their oral care if they need it, if [the resident] is unable to do it themselves. They're now very likely to communicate to the nurse, so she makes sure to communicate to [the mobile provider]... I'd say our nursing assistants have been pretty good at oral care in the past, and that hasn't changed. But the [mobile provider] does a nice job. They're willing to do in-services, and ...they will go talk with the nursing assistants and give some tips maybe on things to do. So that's been helpful."* (MN1A) One mobile model commonly seen in Minnesota requires the facility to appoint a dental liaison, trained by the mobile provider to communicate patient oral health needs to the provider and to coordinate paperwork such as consent forms and patient insurance status. The LTC facility liaison communicates to the provider liaison to streamline service provision. One dental liaison in a 150 bed LTC facility described the role as, *"the go-to person so if [facility staff] has any questions, concerns, or issues, they always contact me. I'm their one primary contact... [The provider] sends me the dental list for an upcoming visit and any kind of antibiotics or anything that needs to be given prior to that appointment. Then just anything that comes up, they just have me the liaison to contact and then I take care of the problem from there."* (MN1B) Facilities that do not have this formal arrangement with a dental liaison often rely on a social worker. *"The social worker is the one who finds out [which residents] want services [from the dentist]... Then that's communicated to the nursing unit secretary... If dentistry is scheduled to be coming in two weeks, they're going to start communicating via emails. Then we just get it set up that way."* (MN1D) Other organizations have a less coordinated approach to communication around patient oral health needs, relying on patients, families, and daily care staff.

One of the more unique aspects of Minnesota's LTC workforce landscape is the collaborative practice model, in which dental hygienists can work collaboratively with up to four dentists by filing a collaborative care agreement with the dental board of Minnesota. Under the purview of collaborative practice, dental hygienists are used by some mobile providers to conduct the oral health screening for new residents required as part of the Minimum Data Set (MDS) under federal regulations for nursing facilities. All respondents expressed a strong preference for having hygienists or dentists conduct the assessment. One even referenced a study he took part in regarding a previous iteration of the MDS that showed that nurse assessments of patient oral health were *"essentially meaningless."* (MN2D)

Another component of the Minnesota dental workforce that is relatively unique is the dental therapist. Minnesota was the first state to license Dental Therapists in 2009, when it created the Dental Therapist and the Advanced Dental Therapist. The Advanced Dental Therapist is also licensed as a Dental Hygienist.

Both must work in collaborative practice with a dentist, and both are able to perform some procedures with indirect supervision by a dentist. In Minnesota, one provider said, *"The marketplace has spoken. The dual license is the desirable skill set...because they can do it all. They can do prevention and basic restorative, and they can assist with emergency care. They can adjust partials and, you know, can do simple repairs to broken dentures."* (MN2A) This interviewee envisioned a near future in which hygienists and therapists would perform tele-health evaluations and serve as the *"main frontline clinicians"* leaving dentists to provide more complex care, such as oral surgery. Currently, dental therapists are not widely used in the LTC setting. *"Our view is that what we need in long-term care are not pure dental therapists who can technically fix teeth. What we need are dental hygienists. In fact, my priority and I think our program's priority would be dentists and hygienists, and if the hygienist happens to be a dental therapist or has expanded function restorative abilities that would be fine. That's more useful because then they can do more things."* (MN2C) This same view was expressed by a dentist who noted that working with a dental therapist, *"frees up my schedule to be doing those [LTC] cases while our dental therapists are doing routine care on ambulatory patients... So, I'm doing a lot more removable prosthodontics (dental prostheses) with this population. We have the ability to see more patients a little bit more rapidly when it is root caries and this kind of stuff because my schedule is a little bit more free to do that rather than having a large population base of ambulatory patients. I have time to do the things that the dental therapist isn't allowed to do. So that's worked out quite well."* (MN2D)

Workforce Training

Minnesota has one dental school with a small but robust training program in geriatric dentistry. The training program is linked with the advocacy efforts around geriatric oral health in the state, which allows vital avenues for dissemination of research and best practices to stakeholders and policy makers in the state. The dentists interviewed noted a difficult paradox in the geriatric dentistry training opportunities available in so far as the complexities are twofold: 1) the regulatory and reimbursement challenges of working in an LTC and 2) the difficult realities of providing appropriate care to a geriatric population when no clear standard of care exists. One provider noted, *"It would be nice for a student who wants to do a training in orthodontics, endodontics, or public health dentistry to meet on the ADA website and find those programs, but that is not possible in any kind of meaningful way with geriatrics or special needs care... Obviously they can handle independent, fairly healthy older people without much difference than they do other folks, where we're getting into people with more chronic diseases, disabilities, cognitive impairment, they're never going to be competent to do that from dental school, and they're going to have to do residencies and advanced training."* (MN2C) Speaking to the dual-pronged nature of dentistry in LTC settings, another provider said, *"It's one thing to train [dentists] to actually work with the patients. It's another thing for them to actually be able to function in that environment... I don't think dental students graduate thinking about, well, is the same treatment plan appropriate for a 30-year old and a 90-year old?"* (MN2A) The complexities of care in the LTC environment are such that *"it should only be done by a well-engineered team versus, you know,*

somebody who doesn't have a team who is trying to squeeze all these extra functions into either themselves or a tiny team in there that's really geared to provide outpatient care." (MN2A)

With respect to the training of non-dental staff, most respondents shared the view that oral health knowledge and training is lacking. Most respondents noted that some level of on-the-job training exists for nursing staff in LTC facilities. One facility explained, *"We're required to have registered nursing assistants. So they have to go through a minimum of a 75-hour course and take a state test. So they actually have some [oral health training]... We actually also run a nursing assistant training program. So we do our own. They don't have to through our program. But oral care is a large part of that training."* (MN1A) Dental professionals did not feel that training was adequate, and many stated that they do some training of their own for staff at LTC facilities, *"We always try to educate the nursing staff, but there tends to be a higher turnover with the long-term care facilities, so then educating them on how to help maintain oral health is difficult."*

Payment and Financing

As in many states, it is complicated to finance a successful dental practice in LTC. Patients in Minnesota have access to a small variety of dental insurance options, including private insurance, self-pay, Medicare Advantage, and Medicaid. All of the dentists we spoke to will treat patients with any type of insurance, and the mobile dentists interviewed reported often being the only provider for the LTC facilities they serve. Because they treat patients within the LTC facility who are not Medicaid and because all of the dentists also treat patients who are not in LTC, providers reported being able to treat all residents with a high level of care. That said, none of the dentists interviewed were able to sustain a practice solely in LTC. *"Five out of six of our patients are not in long-term care. And we actually subsidize our long-term care and disabled adult subgroups within [our practice] with earned income treating other patients on the one hand and with grants and gifts and other sources of revenue on the other. The cost of providing high-quality, comprehensive care is considerably greater than the Medicaid reimbursement, so you would have to provide less care if you weren't subsidizing it."* (MN2A) Another dentist concurred, *"we do not want to limit ourselves to just nursing homes residents ... because if you limit yourself to nursing homes you limit yourself to Medicaid and then you're going to lose a lot of money."* (MN2C)

Some dental practices charge the LTC facilities a monthly fee for each patient to cover some cost of keeping a dentist on call for emergency treatment, as well as, other services that are not billable under Medicaid. Other practices implemented certain cost sharing strategies with the LTC facility in order to provide care. One provider who built a practice on site at an LTC facility explained, *"We both put money into [the practice]. I don't pay rent for things there. You have to have a lower overhead to make that work, because the patients take longer, you know, transferring, and obviously on Medicaid, you're not— Medicaid doesn't cover your expenses, so you have to have lower overhead."* (MN2E) The same provider also maintained a separate

traditional practice. Most LTC facilities interviewed expressed that more than one mobile dental provider was available in their area, which serves to keep providers accountable to the organization.

Organization of Care

Dental care provision for residents of nursing facilities is managed somewhat differently by each of the models in the State. With the use of mobile providers or a dentist with an onsite clinic, fairly comprehensive care can be brought to the patient and complex, emergency and surgical care is performed offsite. *"We have one of our health information coordinators [dental liaison] kind of in charge of it. They schedule days...The night before, [the mobile dental service] drops off all their equipment... and brings it in to, actually, our chapel. We just have to have a water source and a phone. Then they set everything up and do everything right there. The dentist comes. They can do x-rays. They do everything. It's awesome."* (MN1A) The mobile providers treat all patients in each LTC facility that desire care, and accept all insurance types. Dentists with an onsite clinic reported that patients could chose to use that clinic, where all insurance types are accepted, or patients could go to an offsite dentist if they chose. The offsite provider reported having *"several patients from the same nursing home, but [the practice does] not contract to see the whole population."* (MN2D) The patients who chose to go offsite required transportation to the clinic. The provider reported that *"there are several of the nursing homes that we work with that have transportation. [For other homes], the patients or the nursing home will call Metro Mobility and have them deliver [the patient.] On rare occasions, we'll actually give them a voucher for a cab."* (MN2D)

All of the dentists who treat LTC patients in Minnesota reported doing so collaboratively with dental hygienists. *"If the need arises where [a patient] needs to be seen on a different day, I've had a hygienist come in, because we can use collaborative practice in Minnesota where she can see patients when I'm not there."* (MN2E) The mobile models reported using hygienists for preventive care as well as for the new patient and annual assessments required by federal regulations. The provider with an offsite clinic also reported working closely with hygienists and dental therapists in order to enable his time to be spent providing more complex care. *"Now I can get patients the care that they need in a more timely fashion. From a practical, patient satisfaction or patient-centered practice, I think this really did make sense. I think it's turned out well. We are saving money by having the dental therapist work with us."* (MN2D)

Daily mouth care for LTC residents is provided by LTC facility nursing staff, the residents, and dental providers. LTC administrators expressed that this model works for the most part. *"Just for your day-to-day taking care of brushing your teeth, that's the responsibility of the nursing personnel... When it comes to the formal dentist coming in or hygienist, we have ... a mobile dental office [come] to our facility."* (MN1D) In general, patients entered LTC facilities having had access to oral health care. Maintenance of oral health was managed well between the facility staff and the dental professionals. Dental providers expressed a

need for better training of daily care staff, but the care coordination roles filled by dental liaisons at the facility and at the dental practice does allow for efficient and more effective care for patients.

Regulation and Accountability

The dental providers who were interviewed voiced that the regulatory obligations around dental care in LTC facilities are scant and those that do exist are relatively loose. *"The law is that...you have to have a dentist available, your emergency dentist that you can call. So we [had] a contract with a local dentist, and we ... can call him on a Saturday and say, 'Jane Doe has a toothache. What should I do?' But usually that's about all he does is just that."* (MN1C) Another administrator noted, *"When you compare it to pharmacy, it's very different. Pharmacy is much more heavily regulated... Their regulations are hefty when it comes to what they do, how they do it, and what they document. We're so hands-off with the dentists. They kind of take care of it all. We let them know who needs what. They do the service...From my standpoint, the regulations with dentistry [are] we need to make sure our residents get dental care."* (MN1D).

LTC administrators in Minnesota generally felt that the current mobile models of dental care do not require a more heavily regulated environment, but all recalled a period in the recent past when even finding a dentists willing to accept Medicaid was impossible or extremely inconvenient. Providers described various ways in which they try to provide care that exceeds the regulatory requirements. *"Minnesota's regulations require that the facilities have a daily oral care plan for their residents, so what we try to do is to dictate that. Rather than let the nursing staff just figure it out on their own, we specify it."* (MN2C) Among those mobile models that do not include emergency care, access to services is still an issue. *"If there was an emergency, it sure would be nice to have them go [to a dentist within 2,3 blocks of here] versus all the way into [the city] which is 20 miles away."* (MN1D)

Providers were appreciative of Minnesota's diverse workforce and relatively supportive Medicaid policy environment, but some expressed interest in having more billing codes that covered what it really takes to do this work. *"It's recognizing the complexity and the time and so on. [There is] only one code called behavior management, and it's in 15-minute increments. Someone who is cognitively impaired obviously can't [answer simple questions], right? So that means we have to get that information from somebody else. Being able to recline their head, it a simple thing, but a lot of patients that are in long-term care cannot recline their head, which means your staff has to take a look and then stretch their back and take a little break and bend over or use kneeling pads. If they can't [open and close their mouth when you ask], then you need mouth props and all of that. That's going to take time. Or it might even take an extra dental assistant to help hold their head still or their hand still to prevent them from grabbing something and injuring themselves."* (MN2A) This same provider noted that for all the extra care with the behavior management code, they would get an additional \$25 in Minnesota. Another opportunity for reimbursement currently missing in billing codes is IV sedation

versus oral sedation. Use of certain medications can save Medicaid the cost of managing the patient in the operating room, which would be \$10,000 to \$20,000 in addition to the risk that the patient would not survive the procedure. (MN2A)

Minnesota Case Summary

Minnesota's Medicaid dental program is more comprehensive for LTC services than many states and provides a roadmap for other states seeking to improve dental care quality and access to dental care for geriatric patients.

- Despite the challenge of stagnant Medicaid payment rates, the program has some geriatric, patient-friendly policies such as the Critical Access Dental Provider program that enables patient and provider-friendly LTC practice in the state.
- The reimbursement environment is generally favorable to care provision for geriatric patients and patients in LTC settings, but there is room for improvement in more specific billing codes and a payment structure that accommodates the time and resource intensive care required by frail, elderly patients.
- Minnesota's scope of practice and range of provider types allows highly collaborative practice between dentists and other dental professionals as well as between LTCs and dental providers. This collaborative practice frees dentists to focus on provision of complex, patient-centered care, while dental therapists, dental hygienists, and LTC staff can focus on the skills and types of care they are best prepared to provide.
- Despite concerns around turnover and the level of training of daily care staff in oral health care, many LTCs and providers report that collaboration can be highly successful in delivery of high-quality care for LTC residents.
- Dental providers have created models in which all patients have access to the same high level of care regardless of ability to pay, but these models require access to a non-Medicaid patient base and cross-subsidies for sustainability.

Despite the comparatively positive environment, one interviewee noted *"everyone here is also painfully aware that we still have miles to go -- our Minnesota Dental Association Barriers to Care Committee recently was assigned a House of Delegates Resolution originating from our NE District (Duluth area) to address the ongoing problem of poor oral hygiene in LTCF's. So even though we may be somewhat ahead of other states in terms of availability of services and training, we still have some of the same problems found everywhere else."* (MN2C)

CASE STUDY 4: NORTH CAROLINA

State Overview

North Carolina's population ranks thirteenth in the U.S. for total population size at 9,943,964, of which 14.7% (n= 1,461,149) are aged 65 and older.¹⁵ North Carolina is also ranked thirteenth in the nation for the population size of elders living in nursing homes and in the number of nursing home facilities, with a total of 423 facilities. Among nursing home facilities, 51.1% have 100 to 199 beds, 35.7% have 50 to 99 beds, 10.2% (n=42) are smaller than 50 beds, and only 3.1% (n=13) are larger than 199 beds. North Carolina is in the second lowest quintile of states in the number of beds available per thousand residents age 65 or older, with 27.9-34.9 beds per thousand, but is in the middle quintile for beds available per thousand residents age 85 or older, with 269.6-315.7 beds per thousand.¹⁰

Dentist Supply, Education and Workforce

North Carolina is estimated to have 4,208 general practice dentists, which is one dentist per 2363 residents, but 140 HPSA and 133 DHPSA in the state (15, 16). North Carolina has two dental schools, one of which graduated its inaugural class of 50 in 2015 and the other graduated 80 dentists in 2014.¹⁸ While neither university offers a degree, certificate program, or CE program in geriatric dentistry, nearby Duke University does offer a Fellowship in Geriatric Dentistry at the Center for the Study of Aging and Human Development. The Fellowship at Duke is a one year program, with one student completing the program each year.⁴⁸

Table 7. Counts of Dentists by Specialty: U.S. vs North Carolina¹⁶

Location	General Dentist	Endodontist	Oral Surgeon	Orthodontist	Pedodontist	Periodontist	All Other Specialties	Total
United States	167,960	5,417	7,336	10,583	7,059	5,759	6,073	210,187
North Carolina	4,208	144	203	289	193	125	150	5,312

North Carolina licenses dentists and dental hygienists. Dental Assistant I (DA I) and Dental Assistant II (DA II) are classifications based on experience, and the employer is responsible for verifying an assistant's qualifications and determining if he/she is a DAI or DAII. Additional permitting is required for Interns, Dentist Instructors, and dentists who practice anesthesia or sedation.⁴⁹

Critical Policy Factors

Under the ACA, North Carolina has not adopted the Medicaid expansion,²⁹ but does cover some preventive, restorative, and periodontal dental procedures along with dentures and oral surgery services

for non-pregnant, non-disabled adults.³¹ Dentures are covered, but crowns and bridges are not covered. North Carolina elaborates little on the federal regulations around dental care in nursing facilities, stipulating that LTC facilities ensure available routine and emergency dental services and that the LTC facility must, if necessary, assist the patient in making dental appointments and in transportation to a dentist's office.⁸

Medicare beneficiaries make up 16% of North Carolina's population.²⁷ Medicare Advantage uptake in North Carolina is 29% of all Medicare Enrollees, and these plans may or may not cover dental care.¹⁸ Oral Health America rated North Carolina's environment for oral care of older adults as "fair" (55.0 out of 100) based on rates of edentulism, water fluoridation, Medicaid coverage, Dental HPSA, and having a state oral health plan.⁴²

Statewide Support and Advocacy

Advocacy around oral health for seniors in North Carolina came from the academic and professional communities. In 2009 the North Carolina General Assembly passed a law directing the North Carolina Department of Health and Human Services, Division of Public Health, Oral Health Section to examine the current dental care options for populations requiring special care dentistry and provide suggestions for ways to improve the availability of services to those needing such dental services. The Special Care Dental Advisory Group (SCDAG) was formed and comprised representatives of Oral Health Section of the Division of Public Health in collaboration with the Division of Medical Assistance, the Division of Aging and Adult Services, the University of North Carolina at Chapel Hill, East Carolina University Schools of Dentistry, North Carolina Dental Society, and current providers of special care dental services. SCDAG examined current dental care options for populations requiring special care dentistry and provide suggestions for ways to improve the availability of services to those needing such dental services. SCDAG developed a set of 16 recommendations to improve oral health care for those with intellectual and/or developmental disabilities, the frail elderly, those with multiple complex medical diagnoses, and others who encounter barriers in access dental care.⁵⁰

Long-Term Care Dental Delivery in North Carolina

Interview Profile

The seven individuals interviewed in North Carolina included; two administrators in the LTC sector, four dental providers, and one individual in an academic setting. Two respondents were male and three were female. All interviewees, except one, had clinical dental training and experience. Interviews with individuals in the public health sector were attempted; however, none were possible.

Need for Oral Health in Long-Term Care

The need for oral health care in LTC settings in North Carolina is just as great as in the other states that were studied. Patients were often reported to have declining or neglected oral health care for some time before entering into LTC settings *"Most folks entered in long-term care haven't had regular dental care in about five years prior to their admission. So there's usually some cleanup to be done from the extractions or operatives, filling, that kind of thing... And then it really just depends... some folks we can keep leveled off... Other folks every time they open their mouth there's lots of decay"* (NC2A). Once in the care home, it is difficult to maintain the health on a recall schedule that is designed for otherwise healthy individuals. *"More frequent cleanings would be probably recommended in many cases... they are no longer able to do their own oral hygiene, so we're counting on the CNAs within the facilities... and these [the patients] aren't easy people to work with, and they're not cooperative with care"* (NC2C)

Unfortunately the nursing care staff in LTC facilities is not well prepared to deal with the previous neglect that may present in terms of oral health *"I go into facilities, and I'll go "do they have a denture?" "No" And I get in there, and the denture hasn't been out since they got there... and green stuff is growing in the roof of their mouth"* (NC3A). The dental providers that were able to establish good relationships and provide care and training for the staff reported profound changes and improvement in individuals from oral care provision. Even though the need is great and generally under-addressed, the outcomes can be positive if proper attention is paid to oral health of residents in LTC facilities. One example of this, was mentioned by an interviewee who stated that a best practice in this setting would be to ensure all dentures are labeled with the patients name and fitted with a tracking chip. This would greatly reduce the loss of these expensive but necessary components of elders' oral health in the LTC setting.

Workforce Summary

The dental workforce environment in North Carolina limits the scope of practice for allied health providers, yet throughout the interviews, respondents noted how important the whole team, and in particular dental hygienists, were to the delivery of oral health care in LTC settings. Dental hygienists can go to LTC facilities on their own every six months to provide hygiene care but only after a full comprehensive exam and full medical evaluation of the patient. *"It's a special law where the dentist has to register himself as to letting his hygienists go in. And there's this real specific protocol that you have to follow."*(NC3A) A dentist prescribes that a hygienist may see the patient, and the hygiene order is good for 120 days. One provider noted that the time bound nature *"makes it very restrictive"* (NC2A), while another interviewee noted *"It's so cumbersome that I could probably count on one hand how many are using it"* (NC3A) One organization that was interviewed reported that they prefer to send an entire dental team to each site rather than split them out. This is because *"for the dentist to be able to do a full comprehensive exam, the*

teeth have got to be clean" (NC2A) and if all team members are onsite the same day the team can coordinate the exam and cleaning in a way that makes most sense depending on the state of the individual. It was also felt that the prophylaxis fee is not substantial enough to support an independent hygiene appointment in LTC settings, although another organization related that a hygienist worked her own schedule seeing four to eight patients a day.

Seasoned dental providers are felt to be successful in working in LTC settings. One organization required extensive experience before even considering hiring for this type of work. *"New dental graduates are still struggling with their skillset and aren't prepared to take the curveballs, aren't skilled in oral surgery, or the behavior sides that is needed."* (NC2A) On the LTC side, the same configuration of workforce was found as in other states, with CNAs as the primary daily care givers, with oversight by the nursing or medical staff to identify larger issues, and the social services staff to help coordinate the care delivery. While specific roles may differ depending on whether the care is fully mobile and on-site or under a traditional transport to care model, it takes a coordinated inter-professional effort to achieve care delivery for the LTC residents. *"What works well is having a truly engaged team of dentists, hygienists, assistants, all very concerned with providing the best care that they can for that resident or that patient... making sure that it is a smooth day for them to be able to manage the care of those residents. It's very important"* (NC2C).

Workforce Training

The dental workforce is not required to have any specific training in geriatrics or special needs in order to work in LTC, although many of them do have specific training. A general sentiment was that more training requirements would be beneficial particularly if they were coupled with expanded duties for providers. *"Sort of like a nurse practitioner. Have a specialty... set it up that in order to work in these centers to better deliver the care, and to understand the residents, and to do no harm, have them have specialty training in geriatrics, and certified in geriatrics, and in delivering that care, and, knowing how to work with the population, and understanding the disease process of that population"* (NC3A).

While having a geriatric dentist on staff to service the LTC homes was highly desirable, it was also seen as not possible. *"There aren't nearly enough.... And also to be able to compensate them well enough for them to want to come and work... if you have someone who is a specialist... we're already not making money."* (NC2C). Many respondents expressed that finding the right fit of a person in temperament and one whose heart is in it was more important.

North Carolina's nursing homes are pioneering a novel training program and research project called Mouth Care Without a Battle®, which was developed by researchers at the University of North Carolina (UNC) Cecil G. Sheps Center for Health Services Research for nursing homes, assisted living communities,

home health agencies, family members, and health professionals who care for people with cognitive and physical impairment. Mouth Care Without a Battle is an evidence-based approach to daily mouth care for persons with cognitive and physical impairment. The training consists of an educational DVD with modules on mouth care basics that is geared toward the training of CNA's; providing mouth care for people who are resistive or agitated; the critical role of licensed nurses in oral hygiene care; and advocacy and administrative support for quality mouth care. A program website also has information and links available for caregivers to obtain the special tools and products recommended in the training. In addition, further training is available including a half-day group training; a full-day intensive training; technical assistance at implementing a facility-wide mouth care program; and tailored training by special arrangement for facilities or groups of facilities. The training has been widely disseminated in North Carolina where all nursing homes and all community colleges in the State received a copy of the educational DVD in 2013. The model is also being promoted and disseminated in other states. <http://www.mouthcarewithoutabattle.org/>

Several interviewees were involved in this training program and spoke very highly of the impact they witnessed. One nursing home administrator noted, *"I just know from walking around and talking with people... they're feeling better about themselves."* (NC1A) It was reported that one of CNAs going through the training said *"When I first got into this I thought it was gross that they were wanting me to clean peoples teeth. I didn't understand it... Now I love it... And some of them, their personalities have changed from a mean personality to a loving personality. And it's just because I've gotten to know them by cleaning their teeth, and making them feel better... and the caregivers [say] it is making a difference... I'm even seeing a difference in the diabetics and their blood sugars"* (NC3A). The program evaluation underway reported significant improvements in oral hygiene among sites using the model.⁵¹

Payment and Financing

North Carolina provides reimbursement for a limited number of adult dental services, but the reimbursement is vastly inadequate to support the cost of caring for LTC residents. For example, the State only covers denture replacement every five years, but poor fitting dentures are one of the primary reasons residents have trouble eating. LTC facility staff members often have a very difficult time tracking dentures, which are often lost. A replacement (if not covered by Medicaid) can cost an individual thousands of dollars. One dental provider estimated that 75% of patients are Medicaid and noted even with the 25% private pay to balance, *"We have never made a penny. We have always been in the red. We have never made money. The only other income stream we have is the fee that we charge to the facility, either a site fee visit or per our monthly fee visit... and it doesn't offset it... it doesn't pay our bills"* (NC2C) Another mobile care organization that was interviewed, requires a small per bed stipend or retainer to contract with the LTC facilities to make up the difference between what Medicaid will pay and what the cost is to deliver the

care. This fee does not come from IME, the facilities must pay for this out of the *“Muscle, it’s not out of fat... they don’t get to charge that off on a Medicaid cost report”* (NC2A).

Consistent with other states, interviewees felt that the Medicaid payment system was burdensome. *“if anybody wants to have a denture or a partial done, you have to fill out a prior approval. That stays at the facility. Their team needs to fill out a part of that. The medical director needs to sign off on it. It comes back to [the dental] office where the dentist signs off on it before it can be sent into Medicaid for prior approval, before we can start the procedure. We also have to get approval from the power of attorney or whoever gets that consent... So it’s time, and time is money”* (NC2C) There is a facility code visit that the mobile care providers can bill; however, it is only one payment per day, not per individual. Additional recommendations to enhance the payment policy for LTC residents that were made in a 2010 report to the legislature by the Special Care Dentistry Advisory Group have not been implemented by the state.⁵⁰

When existing payment models don’t cover needed care, it is very difficult to get financed privately. *“They [the resident] can’t afford it, and, well, family members go ‘Well, their insurance or their Medicare or their Medicaid won’t pay for it so I’m not putting the money in it because I have to pay \$8,000 a month for them to be in this place, and these people should be taking care of their mouth.”* (NC3A) Some of the interviewees expressed concerns based on anecdotes they had heard about some of the new models of dental insurance being sold in LTC facilities. With no assurances of oversight or regulatory controls, respondents felt that some new financing models may lead to cherry picking for profit, instead of truly caring for the patients.

Organization of Care

Like many other states, North Carolina has seen growth in mobile dental models to serve LTC homes, although a handful of private dentists also serve some facilities. The mobile service provider models are organized to work in partnerships with the facilities they serve. These providers bring full service dental care onsite for the LTC facilities they work with. One of the mobile care organizations we spoke with described the facility responsibility as *“they have liaison at every facility that meets us at the door, that makes sure all of our sedation and antibiotic orders are handled the week before – and that when we arrive patients are ready and waiting for us. They process patients for us during the day”* (NC2A) This particular organization averages 18 to 20 patients a day once they arrive at the LTC facility, providing comprehensive dental services from a fully staffed dental team. The organization has OR privileges twice a month for the very profound cases, and handles emergencies on an on-call basis. Recall is based on the need, up to three times per year under the Medicaid program. The dental group provides a report back to the LTC facility on the status of each patient for the chart.

The dental team that goes on site works together on all aspects of the daily routine, *"Everybody moves equipment, everybody does everything during the day. They have to be ready to have anything thrown at them or spit on them. They have to be creative,"* (NC2A). The teamwork needed to get everything done requires inter-professional and cross-sectional collaboration, with dentists, physicians, nurses, administrators, social workers, CNAs and hygienists all doing different roles. They even describe splitting janitorial duties *"we ask for natural light, to have the floor cleared, vacuumed and cleaned before and after our treatment. We ask them to dispose of our trash... we do not ask them to dispose of our needles, our biohazard."* (NC2C)

The interviewees felt that the mobile service model was the best future direction for caring for the LTC population, and that it was better than the traditional transport model, even though an onsite clinic at every LTC home would be easier for the dental providers. *"I do not foresee that skilled nursing homes would ever put set clinics into their facilities. I just don't think that is a reasonable expectation"* (NC2C) Even though the mobile models serve several dozen facilities, with close to 500 in the state, it is more than likely the majority still have little to no formally organized dental care.

Regulation and Accountability

There is little regulation of the oral health of LTC residents beyond the basic assurance of a contract with a dentist and LTC regulations that daily care be provided. *"But again, if a resident refuses and continues to refuse... How long can someone refuse and you not do it and it not be abuse? I don't know where that line is drawn"* (NC2C) This lack of oversight combined with such limited Medicaid benefits created consternation that was expressed about the type of care that is provided in many cases. One LTC administrator lamented, *"All that was available in the past was – especially in North Carolina where I've done most of my work has been private dentists which will only extract. And that's just heartbreaking. If somebody has gotten to 80, 90 years old and they've managed to keep their teeth, to just automatically do extractions is not acceptable."* (NC1A). Another provider expressed anger that the legislators are again considering cutting Medicaid dental coverage *"I'd like to take everyone of these legislators and pull their tails into a nursing home and say 'Look at this mouth, look at this mouth. Look at this mouth, look at this mouth. Would you want to be like this when you're at this age, and in here?'"* (NC3A)

A consistent theme was the sense that no standard of care was driving practice models. One example is the use of a Cavitron for hygiene care. Some of the interviewees used these systems and others felt they were too risky because of the aspiration problem with many patients. The sentiment is that the lack of standards in part stems from a training breakdown *"We need to specialize more, and emphasize more in the dental schools, and in the hygiene schools, that the geriatric patients in these facilities often only need palliative care. Because I have seen in a lot of these individuals, when the dentist and some specialized teams come in, and do these real extensive treatment plans and in one case the individuals jaw was broken during treatment and the nursing home reported the patient dead within three weeks, I have seen DH's come in and perform SRP to*

remove heavy calculus on persons with “advanced stage” dementia and afterwards the residents stopped eating because it was too painful to eat because of root exposure after the calculus was removed, when you do daily tooth brush prophylaxis care the gums will heal and stop bleeding despite the calculus on the tooth surface... we need to develop a geriatric team... and create a semblance of a standard of care.”(NC3A) The North Carolina Medicaid program, as in many other states, primarily focuses their regulation on credentialing providers as Medicaid providers, which can be a lengthy paperwork process, and then monitoring for fraud. But the system is not set up to address the needs of the elderly in any substantive way. “We need to reinvent the wheel on coding, even just for regular care of patients that aren’t even elderly. I think the whole coding system needs to be revamped, especially for the elderly.” (NC3A)

Many respondents felt that better oversight could drive change. *“Whatever the focus is, that’s what gets paid attention to. I’m really hopeful that the culture change movement in the US will help with that. We’ve certainly managed to get a lot of the regulations changed nationally to be more focused on quality of life, quality of care things” (NC1A).* It was further reported that the Mouth Care Without a Battle program was developed in response to nursing homes having accreditation problems and flunking oral health care. However, it is not a mandatory program, some homes claim it is too burdensome, and the evaluation of impact is still underway. While many approaches are necessary for accountability, one provider summed it up saying, *“There’s not a day I don’t come out of a nursing home upset. Not a single one. Even before I became a hygienist, because people just don’t like taking care of the mouth, even their own mouths. They don’t see the need, and I can’t get the nursing boards to understand this. You’re either going to have to come up with a nurse’s aide that’s there, and call them the oral care aide, and let that be their priority duty, or let the dental team in there on a regular basis and get paid for it.” (NC3A)*

North Carolina Case Summary

There are a number of positive developments that may ultimately drive better dental care in LTC settings:

- The organizations interviewed were able to successfully organize mobile care delivery models for some of the state’s LTC homes, speaking to the success that can come from shared values and resources for oral health in the LTC community.
- The Mouth Care Without a Battle research program is still underway, but preliminary evidence shows it is likely going to be a model for all LTC homes in the future, and has received positive reviews by all our interviewees who were familiar with the program.
- The special care dentistry advisory group produced a set of recommendations for change and improvement—and although these have not been implemented, they are a place to start to build advocacy efforts and new geriatric training opportunities in the state.

Many challenges to providing dental services to residents of LTC facilities remain in the state:

- The restrictions on scope of practice for dental hygiene are limiting the capacity of all dental organizations to fully utilize the hygiene workforce for more frequent and necessary cleanings that the frail elderly population in LTC facilities need.
- Dental providers must contend with a Medicaid program, which has limited and insufficient benefits, pays poorly, is administratively burdensome, and is always under threat of changing.
- The lack of care standards divides the dental community among itself, and divides the medical and nursing care from dental care when they disagree on what is best, and limits the capacity of new policy development to be rooted in a shared perspective about what evidence-based practice should be.

CONCLUSIONS

Despite the many challenges of improving oral health status in LTC facilities, more models of dental care are evolving to address the gap of access to dental care in LTC and SNF settings. This study examined the delivery of dental care in LTC facilities in four U.S. states: California, Florida, Minnesota, and North Carolina. Interviews were conducted in each state, a comprehensive literature review was completed, and state policy analyses in each state were reviewed. Research compiled for this report demonstrates an expanding body of knowledge about gaps in dental care for LTC residents. The report also offers an in-depth discussion about state and local regulations that are surfacing to address the oral health care needs in LTC facilities. At the very least, increased attention to the oral health problems in the LTC environment is creating action in the dental community.

References

REFERENCES

1. Berg R, Berkey DB, Tang JM, Baine C, Altman DS. Oral health status of older adults in Arizona: results from the Arizona Elder Study. *Spec Care Dentist*. 2000;20(6):226-33.
2. American Dental Association (ADA). 2007 Oral Health Care of Vulnerable Elderly Patients Survey. Chicago, IL: American Dental Association, 2009.
3. Vujicic M. Rethinking dentist shortages. *J Am Dent Assoc*. 2015;146(5):347-9.
4. IOM (Institute of Medicine). Retooling for an aging America: Building the health care workforce. 2008.
5. Vujicic M. The booming Medicaid market. *J Am Dent Assoc*. 2015;146(2):136-8.
6. Helgeson MJ, Smith BJ, Johnsen M, Ebert C. Dental considerations for the frail elderly. *Spec Care Dentist*. 2002;22(3 Suppl):40S-55S.
7. American Dental Association (ADA). America's Dentists Launch Nationwide Campaign to Address U.S. Dental Crisis Chicago, IL2013 [cited 2015 December 22]. Available from: <http://www.ada.org/en/press-room/news-releases/2013-archive/may/americas-dentists-launch-nationwide-campaign-to-address-us-dental-crisis>.
8. University of Minnesota; Division of Health Policy Management; School of Public Health. NH Regulations Plus Minneapolis, MN 2005 [updated November 22, 2011; cited 2015 September]. Available from: <http://www.hpm.umn.edu/nhregsplus/NH%20Regs%20by%20Topic/Topic%20Dental%20Services.html#statetable>.
9. Jones A, Dwyer, LL, Bercovitz AR, Strahan, GW. The National Nursing Home Survey: 2004 Overview2009 9/9/2011; Vital Health Stat 13(167). Available from: http://www.cdc.gov/nchs/data/series/sr_13/sr13_167.pdf.
10. Department of Health and Human Services. Centers for Medicare & Medicaid Services' (CMS) annual Nursing Home Data Compendium. 10 ed. Washington D.C. 2013.
11. American Dental Association (ADA) National Eldercare Advisory Committee. Incurred Medical Expenses. Paying for Dental Care: A How-To Guide: http://www.ada.org/~media/ADA/Member%20Center/Files/ime_documents.ashx. Chicago, IL: American Dental Association, Council on Access, Prevention and Interprofessional Relations.
12. Kaiser Family Foundation. Medicaid Benefits: Dental Services Menlo Park, CA 2015 [updated October 2015; cited 2015 September]. Available from: <http://kff.org/medicaid/state-indicator/dental-services/>
13. Mertz E, Glassman P. Alternative practice dental hygiene in California: past, present, and future. *J Calif Dent Assoc*. 2011;39(1):37-46.

14. American Dental Association (ADA). Dentistry in Long-Term Care Course Chicago, IL 2014 [cited 2015 October]. Available from: <http://success.ada.org/en/dentistry-in-long-term-care-course/>.
15. U.S. Census Bureau. American Community Survey, 2014 American Community Survey 1-Year Estimate, Table S0103. In: C. Wides using American FactFinder. 2015.
16. Kaiser Family Foundation. Professionally Active Dentists by Specialty Field Menlo Park, CA 2015 [updated October 2015; cited 2015 September]. Available from: <http://kff.org/other/state-indicator/dentists-by-specialty-field/>.
17. HPSA Find [Internet]. 2015. Available from: <http://datawarehouse.hrsa.gov/tools/analyzers/HpsaFind.aspx>.
18. American Dental Association Health Policy Institute. Report 1: Academic Programs, Enrollment and Graduates. Chicago, IL: 2015.
19. University of Southern California (USC); Herman Ostrow School of Dentistry of USC. Online Master of Science Programs Los Angeles, CA [cited 2015 October]. Available from: <http://dentistry.usc.edu/programs/online-programs/online-master-of-science-in-geriatric-dentistry/>.
20. University of California San Francisco (UCSF) School of Dentistry. Fellowship in Geriatric Dentistry San Francisco, CA [cited 2015 October]. Available from: <http://dentistry.ucsf.edu/admissions/postgraduate-programs/fellowship-in-geriatric-dentistry>
21. University of California Los Angeles (UCLA) School of Dentistry. Geriatric Dentistry Fellowship Los Angeles, CA 2015 [cited 2015 October]. Available from: <http://www.geronet.ucla.edu/education/graduate-post-graduate/152>.
22. University of California Los Angeles (UCLA) School of Dentistry. Center for Geriatric Dentistry Los Angeles, CA 2015 [cited 2015 October]. Available from: <https://www.dentistry.ucla.edu/alumni/center-geriatric-dentistry>.
23. Pacific Center for Special Care. Overcoming Obstacles: A Course for Caregivers San Francisco, CA: University of the Pacific; 2015 [cited 2015 December 15]. 5th Edition. Available from: [http://dental.pacific.edu/Community_Involvement/Pacific_Center_for_Special_Care_\(PCSC\)/Education_/Overcoming_Obstacles.html](http://dental.pacific.edu/Community_Involvement/Pacific_Center_for_Special_Care_(PCSC)/Education_/Overcoming_Obstacles.html).
24. University of the Pacific (UOP) Arthur A Dugoni School of Dentistry. Pacific Center for Special Care San Francisco, CA 2015 [cited 2015 October]. Available from: http://dental.pacific.edu/Community_Involvement/Pacific_Center_for_Special_Care_%28PCSC%29.html
25. Loma Linda University School of Dentistry. Loma Linda University Koppel Special Care Dentistry Center Loma Linda, CA 2015 [cited 2015 October]. Available from: <http://www.llu.edu/dental-clinics/koppel-center/index.page>.
26. Western University College of Dental Medicine. Doctor of Dental Medicine (DMD) Pomona, CA 2015 [cited 2015 October]. Available from: <https://www.westernu.edu/dentistry/dentistry-about/>.

27. Capital Accounting Partners. Dental Board of California Final Report – User Fee Audit. Sacramento, CA 2015.
28. Wides C, Alam SR, Mertz E. Shaking up the dental safety-net: elimination of optional adult dental Medicaid benefits in California. *J Health Care Poor Underserved*. 2014;25(1 Suppl):151-64.
29. Kaiser Family Foundation. Status of State Action on the Medicaid Expansion Decision Menlo Park, CA 2015 [updated September 2015; cited 2015 September]. Available from: <http://kff.org/health-reform/state-indicator/state-activity-around-expanding-medicaid-under-the-affordable-care-act/>.
30. Tsai C, Wides C, Mertz E. Dental workforce capacity and California’s expanding pediatric Medicaid population. *J Calif Dent Assoc*. 2014;42(11):757-64, 66.
31. Medicaid and CHIP Payment and Access Commission (MEDPAC). Report to Congress on Medicaid and CHIP. Washington, DC 2015 June 2015.
32. Denti-Cal: California Medi-Cal Dental Program. Medi-Cal Dental Program Provider Handbook. In: Department of Health Care Services. Sacramento, CA 2015.
33. Denti-Cal: California Medi-Cal Dental Program. Teledentistry. *Denti-Cal Bulletin*. 2015;31(8):1.
34. Glassman P. The use of interim therapeutic restorations in the virtual dental home system. *J Calif Dent Assoc*. 2013;41(6):379.
35. Glassman P, Harrington M, Mertz E, Namakian M. The virtual dental home: implications for policy and strategy. *J Calif Dent Assoc*. 2012;40(7):605-11.
36. Glassman P, Harrington M, Namakian M, Subar P. The virtual dental home: bringing oral health to vulnerable and underserved populations. *J Calif Dent Assoc*. 2012;40(7):569-77.
37. Glassman P. Virtual dental home. *J Calif Dent Assoc*. 2012;40(7):564-6.
38. Center for Oral Health, Oral Health & Quality of Life Among Older Adults: A Multidisciplinary and Interprofessional Perspective. 2015 Oral Health Symposium; 2015; Los Angeles.
39. University of the Pacific (UOP) Arthur A Dugoni School of Dentistry. the Statewide Task Force on Oral Health for People with Disabilities and Aging Californians San Francisco, CA 2015 [cited 2015 October]. Available from: http://dental.pacific.edu/Community_Involvement/Pacific_Center_for_Special_Care_%28PCSC%29/Innovations_Center/California_Statewide_Task_Force_for_People_with_Disabilities.html.
40. Oral Health America. A State of Decay: Are Older Americans Coming of Age without Oral Health Care? Chicago, IL: Oral Health America, 2013.
41. University of Florida College of Dentistry. Continuing Dental Education Gainesville, FL 2015 [cited 2015 October]. Available from: <http://ce.dental.ufl.edu/courses/>.

42. Florida Board of Dentistry. Licensing and Registration Tallahassee, FL Florida Department of Health 2015 [cited 2015 October]. Available from: <http://floridasdentistry.gov/licensing/>.
43. Centers for Medicaid and Medicare Services (CMS). Managed Care in Florida 2015. Available from: <http://www.medicaid.gov/medicaid-chip-program-information/by-topics/delivery-systems/managed-care/downloads/florida-mcp.pdf>.
44. University of Minnesota; Division of Health Policy Management; School of Public Health. Clinical Practicum in Geriatrics and Long-Term Care Minneapolis, MN 2012 [updated September 20, 2012; cited 2015 October]. Available from: <http://www.dentistry.umn.edu/dentalce/courses/clinical-practicum/index.htm>.
45. University of Minnesota; School of Dentistry. Fact Sheet: Oral Health Services for Older Adults Minneapolis, MN 2015 [updated September 20, 2012; cited 2015 December]. Available from: www.dentistry.umn.edu.
46. Minnesota Board of Dentistry. Licensure Minneapolis MN2015 [cited 2015 October]. Available from: <http://mn.gov/boards/dentistry/licensure/>.
47. Shuman S, Simonson P, Tschida B, Owen M, Ofstehage J, Glasrud P. Myths and facts about Minnesota's new safe patient handling statute and your dental practice. *Northwest Dent*. 2011;90(4):13-6.
48. Duke University Center for the Study of Aging and Human Development. Fellowship in Geriatric Dentistry Durham, NC 2014 [cited 2015 October]. Available from: <http://centerforaging.duke.edu/education-a-training/53>.
49. North Carolina State Board of Dental Examiners. License and Permit Information Morrisville, NC 2015 [cited 2015 October]. Available from: <http://www.ncdentalboard.org/license.htm>.
50. Special Care Oral Health Services: A North Carolina Commitment [press release]. <http://www2.ncdhhs.gov/dph/oralhealth/library/includes/Special%20CareDentistry%20Report%203-3-10.pdf2010>.
51. Sloane PD, Zimmerman S, Chen X, Barrick AL, Poole P, Reed D, et al. Effect of a person-centered mouth care intervention on care processes and outcomes in three nursing homes. *J Am Geriatr Soc*. 2013;61(7):1158-63.



Center for Health Workforce Studies
School of Public Health | University at Albany, SUNY
1 University Place, Suite 220 | Rensselaer, NY 12144-3445

www.oralhealthworkforce.org