Summary of Materials Found

1. Material about dentists

a) Overview of workforce

See <https://www.bls.gov/ooh/healthcare/dentists.htm> for a general overview

The “Work Environment” part provided an overview of the forms of organization they work in, while “Job Outlook” gives Bureau of Labor Statistics(BLS)’s projection on job growth in 10 years.

b) Overview about dentist association

There’s really much to talk about it: it’s association of dentists in America. It provides platform for dentists to know their benefits and trade or make transition with their practices. (<https://www.ada.org/about> )

c) Criticism

I failed to find much criticism from newspapers or reliable megazines, besides Slate as you provided, on American Dental Association. I do have a few of their publications which might be controversial but I cannot be sure.

[https://www.ada.org/about/governance/current-policies#medicaidchip](https://www.ada.org/about/governance/current-policies" \l "medicaidchip), part about MediCare. I’m doubtful about their support to the program they listed. Their advocacy for certain articles ensuring dentists’ income reminds me of Stick Builders lobbying Federal Housing Aid for stick-built house and not factory-made houses, which effectively made MediCare to their additional income reimbursed by national health insurance. However, I cannot find evidences of these suspects.

Additional sources comes in this report: <https://www.ada.org/publications/ada-news/2021/november/medicare-dental-benefit-not-included-in-house-passed-legislation>.

ADA is also supporting CHIP (Children’s Health Insurance Program), as seen here:

<https://www.ada.org/publications/ada-news/2021/july/groups-urge-congress-to-make-chip-permanent>

And here: Uneven distribution of dental resource and difficulty in using MedicAid caused inadequate care for American children, especially those of low income household. Source: https://www.pewtrusts.org/~/media/legacy/uploadedfiles/pcs\_assets/2013/insearchofdentalcarepdf.pdf

(Found in folder as PEW\_Dentist\_Shortage\_Limiting\_Childrens\_Access\_To\_Care.pdf)

However, I doubt the effectiveness of these materials. From the perspective of common people, I found no problem for them expanding care. I believe that the issue with ADA shall mainly be their suppression on new technologies and low-cost substitutes, instead of expanding care.

1. Substitute: Dental Hygienists

a. Responsibility by state

See <https://www.adha.org/scope-of-practice> for a brief overview.

b. Regulations and Supervision.

Supervision required for dental hygienists vary by state. Some practices requires direct supervision, while some requires general supervision. Within the scope of general supervision, some state allows dentists to be off-site.

Here’s an overview of the supervision required:

https://www.adha.org/resources-docs/7511\_Permitted\_Services\_Supervision\_Levels\_by\_State.pdf

(Included in folder as 7511\_Permitted\_Services\_Supervision\_Levels\_by\_State.pdf)

In some cases, dental hygienists can sign in collaborative agreement with dentists and the practice they work for, which allows them off-site to community locations. Here’s a file about collaborative agreement in Minnesota:

<https://www.health.state.mn.us/data/workforce/oral/docs/2021ucdhpmn.pdf> (Included in folder as collaborative\_practice\_Minnesota.pdf)

Reading “Background” and “Facilitators and Barriers” are enough.

The following gives a list of states where collaborative practice is allowed.

<https://www.adha.org/resources-docs/7513_Direct_Access_to_Care_from_DH.pdf> (Included in folder as 7513\_Direct\_Access\_to\_Care\_from\_DH.pdf)

I didn’t find a pair of state suitable for comparison though.

1. Substitute: Dental Therapists

Dental therapists were also non-dentists who may perform some tasks with dentists both on and off site (general supervision). Minnesota started its dental therapist program in 2009, the first of the nation. This included both dental hygienist (DT) and Advanced Dental Hygienist(ADT)

<https://www.health.state.mn.us/data/workforce/oral/docs/2019dt.pdf> Provided am overview of dental therapist workforce in Minnesota. There are 92 dental therapist license in Minnesota in 2018. Generally this number stayed around 100. The file was found in folder as Dental\_Therapist\_Workforce\_Overview\_Minnesota.pdf

The delegated duties are as the following.

[https://mn.gov/boards/assets/DT-ADT%20Delegation%20Chart%20-%20Revised%203-01-2018\_tcm21-337624.pdf](https://mn.gov/boards/assets/DT-ADT Delegation Chart - Revised 3-01-2018_tcm21-337624.pdf). It was included in folder as Dental Therapist Scope of Practice Minnesota revised 2018.pdf

In addition, ADHA (American Dental Hygiesnits' Association) provided a list of allowed dental therapist practice:

<https://www.adha.org/resources-docs/Expanding_Access_to_Dental_Therapy.pdf> (Included in file as Expanding\_Access\_to\_Dental\_Therapy.pdf)

There's a paper advocating usage of dental therapist. The key pillar of success of dental therapists included community engagement and support, and the paper advocated for national license for dental therapists to address health inequality. Source: <https://journals.lww.com/lww-medicalcare/Fulltext/2021/10001/Dental_Therapists_in_the_United_States__Health.8.aspx> (Included in folder as "Dental Therapists in the United States Health Equity Advancing.pdf" )

Till now only Minnesota have such regulations. We can possibly make a comparative study between Minnesota, Colorado, and Washington. These states had similar population (about 5-7 Million) and similar median income (about $70,000 to $77,000 in 2020) over past decade. However, a concern is the number of dental hygienists: 100 dental therapists sounds too small to make an impact. The later two states did not pass any law regarding usage of dental therapist.

For reference, here’s an article about Colorado’s progress to Dental Therapist Bill.

<https://cdaonline.org/news/latest-news/possible-dental-therapy-legislation/>

1. Substitute in equipment

I’m not an expert and knows little about technology used in dentistry. My father, who does electronics business in China, advised me to look into 3-D printed dentures. These 3-D printed dentures takes less time for measuring and is usually cheaper, manufactured in dental labs. Labs claims that they are cheaper than traditional dentures. (<https://dental.formlabs.com/indications/digital-dentures/> is one of them and first of Google search result. )

However, I found that ADA is encouraging dentists to take these new technologies (<https://marketplace.ada.org/blog/dental-business/whats-the-latest-in-new-dental-technology/>). I have yet found any comments on it from Denturists’ Association.

I’m doubtful on dental associations’ rejection of technology. Unlike house building industry in James Schmitz’s report, there are yet any technology that can replace dentists completely (while factory-built housing can replaces stick builders by far), thus they have no incentive to restrict usage.

There are few report on Artificial Intelligence regulations in dentistry. In 2021 ADA called for members to join standard working group for new artificial intelligence(<https://www.ada.org/publications/ada-news/2021/march/new-standards-working-group-to-focus-on-artificial-intelligence-in-dentistry>), but I have yet found any further standard, policy statement, or news article.

1. Some Theoretical Works

I have found a few articles stating the effect of stringent licensure requirement on industrial supply. Namely, stringent license requirement on mid-level providers like dental hygienists can restrict their supply and therefore raising price. While some level of license is necessary for obvious reasons, license cannot be made too tight.

These articles are, however, quite old. The Liang and Ogur research in 1987 found that, comparing with state that does not limit number of dental hygienist each dentist can hire, states that does limit have patient visit price increased by 7%. The paper used regressional analysis. Variables were found in page 24 and 25, while results were in page 41. The link is <https://www.ftc.gov/sites/default/files/documents/reports/restrictions-dental-auxiliaries/232032.pdf> and was included in folder as Liang and Ogur 1987.pdf.

Morris M. Kleiner wrote in 2015 a long report on occupational licensing, which included dental industry.

While theoretically licensure increase both price and quality of service, Kleiner claims that “evidence thus far does not support the assertion that more heavily regulated services are of higher overall quality”(page 44).

Specifically for the case of dentistry, he referenced Kleiner and Kudrle 2000, which found no effect of stricter state licensing requirement on oral health using data on air force recruit. The results are in page 564-568, but a bit technical. This paper is found at <https://www.journals.uchicago.edu/doi/10.1086/467465> and included in folder as Does Regulation Affect Economic Outcomes the Case of Dentistry.pdf

In additional, the 2015 Kleiner paper provided policy suggestion of giving more autonomy and less supervision to dental hygienists (page 81-83).

The paper can be found at <https://research.upjohn.org/cgi/viewcontent.cgi?article=1254&context=up_press> and included in folder as Guild-Ridden Labor Markets The Curious Case of Occupational Lice.pdf

One paper Kleiner (2015) referenced was Marier and Wing (2014), which was found at <https://www.sciencedirect.com/science/article/abs/pii/S0167629613001689>. I was unable to access it.

1. Relevant Data

Here’s data on number of dentists and dental hygienists, by state and by Metropolitan Statistical Area. I have yet found a way to organize them in clean manner, but I’m confident about it using R. Here’s the link.

<https://www.bls.gov/oes/tables.htm>

The code for Dental Hygienists is 29-1292, as part of 29-1290(29-1290  Miscellaneous Healthcare Diagnosing or Treating Practitioners )

The code for Dentists is 29-1020 (General), consisting of :

29-1021 Dentists, General

29-1022 Oral and Maxillofacial Surgeons

29-1023 Orthodontists

29-1024 Prosthodontists

29-1029 Dentists, All Other Specialists

There is little data on education of dental hygienists. There’s no school-level admission data available, but I did found a few pages:

<https://www.adea.org/Applications-and-Acceptances-Dental-Hygiene-Programs-2002-03-to-2016-17.pptx> (Contained in folder)

<https://www.adea.org/Dental-Hygiene-Graduates-1990-2016-Graph.pptx> (Contained in folder)

1. Materials less useful

This part was intended to include those materials that I have read but not useful.

Wall Street Journal has no article I found important.

Business Insider also had nothing I found important.

1. Opinion Papers.

These papers are governmental reports or from humanitarian organizations. Their content had more emphasize on opinion and advice over fact. I have not included them in the folder.

FTC had some topic about dentistry(<https://www.ftc.gov/advocacy-document-tags/dentistry?type=All&mission=All> ), but this included mostly their opinions on state regulations that increased the duty of dentists. They are generally negative to it, but their reports included mostly theories and opinions, with less emphasizes on investigation and facts.

One example is giving duty of direct supervising to dentists in Ohio’s Senate Bill 330, in <https://www.ftc.gov/system/files/documents/advocacy_documents/ftc-staff-comment-ohio-state-senate-regarding-competitive-effects-sb-330-increasing-access-quality/v170003_ftc_staff_comment_to_ohio_state_senate_re_ohio_sb_330_re_dental_therapists_and_hygienists.pdf> ).

Another Example was its comment in 2015

W.K. Kellogg foundation published a literature review about other countries’ usage about dental therapists. This may not help with our research directly. (<https://www.mchoralhealth.org/mn/dental-therapy/references/DT-Lit-Review-2012.pdf> )

There’s a presidential report in 2018 advocating less license requirement and expanding mid-level providers for healthcare, like dental hygienists. The criticism (page 33-37) focused mainly in government decisions in restricting these providers, despite them being able to practice many functions. Citations included FTC reports above. Another part of criticism included Certificate of Public Advantage (COPA) that limited anti trust initiative on these medical associations.

It advised also transition to Health Savings Account and Health Reimbursement Arrangements to provide dental care.

Link: <https://www.hhs.gov/sites/default/files/Reforming-Americas-Healthcare-System-Through-Choice-and-Competition.pdf>