THE VARIANCE BETWEEN ELIGIBILITY AND FUNDING FOR MEDICAID PATIENTS SEEKING ORTHODONTIC TREATMENT IN PENNSYLVANIA

A Thesis
Submitted to
the Temple University Graduate Board

In Partial Fulfillment
of the Requirements for the Degree
MASTER OF SCIENCE in ORAL HEALTH SCIENCES

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August 2021

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ABSTRACT

Objectives: Medicaid Insurance Provider funding decisions often differ from the orthodontic clinician, assessed by malocclusion indices used for approvals. This study analyzed differences between clinician and insurance, insurance providers, and time of year for funding approval of orthodontic treatment. Since many American orthodontic graduate programs utilize Medicaid access to care as their predominant source, our sample evaluated Temple's University Orthodontic cohort, between January 1st, 2018 and Dec 31st, 2019.

Methods: The sample included 1,576 individuals, with 926 insured by Company 2 or Company 3 and the remaining 207 insured by either Company 1, Company 4, Company 5, or Company 6. Malocclusion severity evaluation had an inter-examiner reliability ≥90%, using the Salzmann Evaluation Index, with a score of ≥25 determining treatment need. These scores along with intra and extra oral photographs, a cephalogram and panorex, and an intra oral scan were sent to the Insurance Provider, an employee of the insurance provider received the records submitted and made a funding decision.

Results: Company 3 displayed the highest similarity to the orthodontic clinician's assessment, agreeing 69.7% of the time. Company 2 and Company 4 showed the lowest similarity at 39.8% and 33.3% agreement respectively. Company 2 and Company 3 were significantly different from each other in the way they determined eligibility for funding with a P-value of <0.000. The time of year was significant, p-value <0.01, only for

Company 3, with the highest agreement similarity in May at 73.2% and the lowest in November at 30.3%.

Conclusions: Company 2 funds a significantly lower percentage of individuals submitted with a SEI score of ≥25 than all other Providers, excluding Company 4. These findings suggest that Company 2 is evaluating individuals significantly different from orthodontic clinicians, raising potential access to care concerns. The time of year was significant only for Company 3, although no overall trend was observed.

ACKNOWLEDGEMENTS

I would first like to thank Dr. Jeffrey Godel for choosing me to be a part of the esteemed Temple Orthodontic Family. Thank you for pushing every resident to perform their best and not settle for anything less. Your dedication to the specialty of Orthodontics and educating the future generations is something I hope to emulate.

Thank you to Dr. James Sciote for being patient with me as I learned how to write a master's Thesis. Thank you for encouraging me to put my best effort into research and helping me enjoy the process.

Thank you to Dr. Carmen Doumit for all the hard work you do to make Temple Orthodontics one of the greatest places to learn a specialty. Thank you also for listening and sharing stories about our children, it is refreshing to work alongside another young parent.

Thank you to Mr. John Moore for guiding me through how to carry out my results. Without your help, this project would not have been possible.

And lastly, thank you to my family for your endless support during the past two years, I could not have made it to where I am today without your help.

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CHAPTER 1

INTRODUCTION

Temple Department of Orthodontics, located in North Philadelphia, performs resident screenings which initiate assessments for malocclusion treatment. A significant portion of these screenings involve children with Medicaid Insurance. For orthodontic coverage, Medicaid insurance providers require the orthodontist to complete a Salzman Evaluation Index (SEI) on every eligible child. Defining eligibility varies according to the individual Medicaid provider, however, most require the child to have a permanent dentition developmental stage and be below the age of 21.

A SEI is an evaluation of the child's occlusion based on the following criteria: teeth missing, rotations, crowding, open or closed spacing, overjet, overbite, anterior or posterior crossbite, open bite, and dental Classification I, II, or III. At Temple Orthodontics, the residents complete the SEI and obtain a score (See Figure 6). If the score obtained is 25 or above the child is eligible for orthodontic treatment. If the Salzman score is below 25 the patient is not eligible for treatment.

After Completion of the SEI by a resident, records are taken which vary depending on the Medicaid provider. Once the records are completed, they are submitted to the insurance provider for approval or denial. An employee of the insurance provider receives the records submitted, rescores the SEI, and determines the child's approval status. A problem with coverage is mismatch between what Dental physicians determine are approvable scores and how the insurance provider responds. Frequently, patients who score above 25 on the SEI, clearly eligible for treatment, are denied funding by their

Medicaid Provider. This discrepancy negatively effects the health of children who would greatly benefit from orthodontic treatment but do not have the family financial resources to do so. The cause of this variation between provider scores and insurance approval is unknown; however, it could be due to the insurance provider scoring SEI, constraint for additional funding that month or year, or perhaps other requirements for distribution of approvals by geography or demography across Pennsylvania.

This study will analyze children screened at Temple Orthodontics who were eligible for and had an SEI submitted to their Medicaid Insurance Provider. The SEI recorded by the orthodontic resident will be correlated with the response received from the individual insurance provider to characterize the inconsistency. The study aims to identify reasons behind this inconsistency. The date an individual Medicaid provider responds will be recorded and correlated to the Medicaid Provider's fiscal year. The number of orthodontic funding approvals will be compared and contrasted between Individual Medicaid Providers. Gaining insight into the funding characteristics of Medicaid Providers will educate orthodontic phyisicans to better assist prospective patients in obtaining coverage.

CHAPTER 2

REVIEW OF THE LITERATURE

2.1 How is Malocclusion Severity Assessed?

Developing an appropriate orthodontic treatment plan requires a thorough and accurate diagnosis of the malocclusion present. Before correctly diagnosing malocclusion, a clinician should have a core understanding of what an ideal occlusion looks like, this allows the clinician to differentiate normal occlusion from abnormal occlusion or malocclusion. In the article "*The 6 keys to normal occlusion,*" Andrews developed a set of characteristics that can be used to assess ideal or normal occlusion (Andrews, 1972). This article defines the proper molar relationship, crown angulation, crown inclination, no rotations, no spaces, and proper occlusion plane that coincide with an esthetic and functioning occlusion. Once a clinician is educated on what is considered normal occlusion an accurate diagnosis of malocclusion can be achieved.

Developing a definition for malocclusion is more complicated and complex. One method that has been widely accepted and used since its inception in 1899 is Angle's method. Angle's method evaluates the molar relationship in a sagittal plane and looks at anterior and posterior deviations of the teeth and jaw from a set of norms. A limitation of this method includes no regard for the relationship between the teeth and the face. A more complete method for identifying malocclusion was identified in 1973 by Proffit and Ackerman. The primary objective of this method at the time was to establish a treatment need in a specific population. Expanding on Angles molar

classification the assessment included alignment of teeth, the Profile, Crossbites, Angle's sagittal classification, and Bite Depth. While there is no universally accepted index for measuring malocclusion, the method developed by Proffit and Ackerman represents a more comprehensive and three-dimensional approach to evaluating malocclusion.

An important aspect of orthodontics is not simply identifying malocclusion but the severity of an individual's malocclusion. A clinician may alter treatment costs based on how severe an individual's occlusion differentiates from normal. Likewise, an Insurance Company may determine which individuals qualify for orthodontic funding based off the severity of malocclusion. Due to the importance of diagnosing malocclusion and the potential financial impact, orthodontic communities have developed several Treatment Need Indices. These Treatment need indices provide an objective method for diagnosing malocclusion and allow the clinician to assign a numerical or categorical score to an individual's malocclusion.

A large number of Treatment Need Indices have been developed with the most common indices including the Occlusal Index by Summers, The Treatment Priority Index (TPI) developed by Grainger, The Index of Orthodontic Treatment Need (IOTN) developed by Brooke and Shaw, and the Handicapping Malocclusion Assessment Record (HMAR) developed by Salzmann (Grippuado et al, 2008).

These indexes can be considered quantitative or qualitative depending on the type of description used. Qualitative Indexes use descriptions to define the scale of treatment need, such as extreme, severe, and extensive (Grippuado et al, 2008). These descriptions lead to a high risk of bias as clinicians may arbitrarily identify a child's

malocclusion as being extreme or extensive. A more experienced clinician may have a better understanding of what classifies severe malocclusion than a recently graduated one. Quantitative Indices allow the doctor to obtain measurements of specific occlusal features and from those measurements develop a score. This score creates a malocclusion severity grid, individuals with the most severe malocclusions obtain the highest scores and individuals with the least severe obtain the lowest scores. A quantitative index includes less risk of bias than a qualitative one due to its reproducibility, or "capability to have the same result if one or more operators use it for the same clinical case in the same or different moments (Grippuado et al, 2008)."

What to include in an orthodontic treatment need index can be a difficult task to complete. An accurate index should be one that correctly identifies those displaying malocclusion from those displaying normal occlusion. Defining normal occlusion, as Andrews outlined in *The 6 keys of normal occlusion,* creates a set of parameters to help identify those individuals deviating from normal. Molar relationship, overjet and overbite, rotations, spacing, and crowding are several of the key factors included in almost every orthodontic Treatment Need Index. These Indices allow clinicians to evaluate the amount an individual's occlusion deviates from a normal occlusion (Andrews, 1972).

An Index should not take long to complete, should be very user friendly, and should be easily repeatable between clinicians (Ali, 2011). Most Insurance Companies use orthodontic Treatment Need Indices to prioritize funding for individuals seeking orthodontic treatment. An Index should achieve high specificity, identifying those not needing treatment, and high sensitivity, identifying those in need of treatment (Ali,

2011). The indices allow the clinician to obtain a score and typically there is a cut-off score which represents the lowest point value that allows treatment to be funded by the insurance Company. These cut off scores can be adjusted based on the Insurance Company's available resources or on the perception of need in a geographic location. The scores obtained from these indices provide an opportunity for clinicians to work alongside insurance companies to correctly allocate funds to those individuals who display the greatest need.

Assessing malocclusion severity not only allows the clinician to correctly diagnose and orthodontically treat an individual but it also provides an opportunity to determine who may benefit more from treatment. The Orthodontic Treatment Need Indices developed over the past 75 years offer a set of standards orthodontic communities can use to universally classify individuals based on malocclusion severity. Lastly, determining eligibility for orthodontic treatment and subsequent funding by an insurance Company is made possible by these indices.

2.2 Private Orthodontic Insurance vs. Medicaid Insurance in the United States

There are two main ways for an individual to obtain Insurance funding for orthodontic treatment, Privately or Publicly. Private Insurance Company's vary depending on the individual provider; however, most have a similar set of parameters for enrollees. The majority of Private Insurance's are employer-sponsored and are part of an employer's health care package. Typically, a visit to an in-network doctor and after a comprehensive exam an initial estimate of cost is created and submitted to the Private Insurance Company. The Insurance Company sends an overview of the official treatment cost, including how much the insurance Company pays and what the enrollees share, or copay will be. Funding from Private Insurance Companies can reduce the cost of orthodontic treatment ranging from 20-50% depending on the provider or plan set up with the enrollee. Private Insurance usually does not use an orthodontic Treatment Need Index and funding determinations are much simpler, you either have insurance and qualify for funding, or you do not have insurance and do not qualify.

The second way an individual may obtain funding for orthodontic coverage is through public assistance or Medicaid. Medicaid is a joint federal and state program, that together with Children's Health Insurance Program (CHIP), provides health coverage to over 72.5 million Americans. Medicaid is the largest source of health coverage in the United States. Federal Law in the United States requires states to provide Medicaid Insurance to certain groups of people, including children, pregnant women, parents, seniors, and individuals with disabilities. With the implementation of

the Affordable Care Act of 2010 determining eligibility for Medicaid was based on the Modified Adjusted Gross Income (MAGI). MAGI is a tool used to help families with children determine if they meet the financial requirements for Medicaid.

Included in the benefits of Medicaid, for a child who is eligible and under the age of 21, is orthodontic treatment. The present study focuses on Medicaid Insurance specifically how it relates to orthodontics.

2.3 Defining Handicapping Malocclusion

From the origin of Medicaid, after the implementation of the Social Security act of 1965 (Salzmann, 1967), whether or not to include orthodontic treatment under Medicaid dental coverage was debated. Separating necessity for orthodontic treatment from elective orthodontic treatment can be a difficult task, however, malocclusion in a developing child can cause both physical and psychosocial disorders. Physical disorders can include but are not limited to plaque induced gingivitis exacerbated by dental crowding, dental trauma from improper overjet, biting of the gingiva, and cranio-skeletal deformities leading to occlusal instability. The psychosocial disorders are often a reflection of how the general public perceives the malocclusion to be abnormal. In these cases, the child or adolescent may be very self-conscious, have low self-esteem and be more susceptible to teasing or bullying (Solow, 1995). Medicaid defines those malocclusions which are eligible for treatment as “Handicapping malocclusions.”

Half of the funding for Medicaid is financed by the federal government and half is financed by the state government. Defining "handicapped malocclusion" is left to the state and varies by state. Following the Social Security act of 1965, various orthodontic treatment priority Indices were developed such as the malocclusion Dental Esthetic Index, The Index for Orthodontic Treatment Need, and The Salzmann Evaluation Index. Each index aims to appropriately identify eligibility for treatment, leading to coverage for orthodontic treatment through federal and state funding. The Salzmann Evaluation Index (SEI), developed in 1966 by J.A. Salzmann, Chelsea Michigan, is used in Pennsylvania. J. A. Salzmann defined "handicapping Malocclusion" as conditions that constitute a hazard to the maintenance of oral health and interfere with the well-being of the child by adversely affecting dentofacial esthetics, mandibular function, or speech (Salzmann 1967). The SEI is an evaluation of the child's occlusion based on the following criteria; teeth missing, rotations, crowding, open or closed spacing, overjet, overbite, anterior or posterior crossbite, open bite, and dental Classification I, II, or III.

The SEI is popular in many states because the index is simple to complete and does not require a significant amount of the clinician's time. In a matter of minutes, a doctor can evaluate a child and obtain a score which determines the child's eligibility for orthodontic funding. Additionally, in order for an index to be used effectively, it must be repeatable and reproducible between clinicians for a given individual. Several studies were performed to assess this reproducibility of malocclusion indices, including the SEI.

Gray and Demirjian in 1977 evaluated the Handicapping Labio-Lingual Deviation (HLD) Index, the Treatment Priority Index (TPI), the Occlusal Index (OI) and the SEI. The aim of the study was to determine the reproducibility and accuracy of these four indices. The results demonstrated that all four models were highly reproducible and accurate for determining the severity of malocclusion. More specifically, the article stated that the SEI was "found to be highly reproducible and sensitive over the entire range of occlusions. Otuyemi and Noar in 1996 studied the SEI, the OI, and the Dental Esthetic Index (DEI) concluding that all three indices demonstrated high levels of reliability. These included articles help prove that the SEI accurately measures the severity of malocclusion and yields the same results when one or more doctors measure the same individual.

Knowing that the SEI is repeatable and reproducible validates its use in Pennsylvania for measuring handicapping malocclusion. The SEI gives Medicaid the tools to effectively distribute funds to individuals with the greatest need for treatment or most severe malocclusion. It is the clinician's responsibility to be appropriately trained in completing a SEI. The following section will outline how to accurately complete an SEI.

2.4 Scoring a Salzmann Evaluation Index

The Salzmann Evaluation Index provides a method for establishing a cut-off point for what quantifies as Handicapped Malocclusion. Presented below is an outline on how to appropriately complete a Salzmann Evaluation Index on an eligible child.

- Scoring should be based on the first impression of the malocclusion and no extra time should be spent evaluating difficulty of treatment
- The assessor assigns points in the following way

1. 2 points given to the maxillary anterior teeth and 1 point given to the mandibular anterior teeth and all posterior teeth based on the following
    a. *Missing teeth* – count the teeth: unerupted, severely carious nonfunctioning tooth, or a tooth with only the roots remaining
    b. *Rotated Teeth* – irregularities of crowns that interrupt the continuity of the arc of the dental arch with sufficient space
    c. *Crowded Teeth* – irregularities of crowns that interrupt the continuity of the arc of the dental arch with sufficient space.
    d. *Spaces* – score the teeth, not the spacing
        i. *Open Spacing* – one or both interproximal tooth surfaces and adjacent papillae are visible in the anterior tooth: both interproximal surfaces and papillae are visible in a posterior tooth

ii. *Closed Spacing* – space is not sufficient to permit eruption of a tooth that is partially erupted. Figure 1 illustrates the intra-arch deviations.

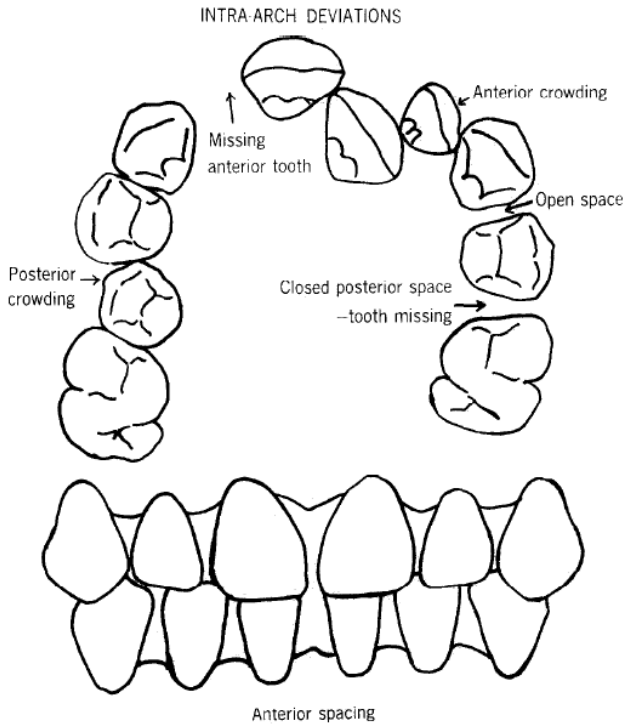


Figure 1: Intra-Arch Deviations

2. Interarch Deviation

    a. *Overjet* – refers to labial position or inclination of the maxillary incisors in relation to the mandibular incisors, allowing the mandibular incisors to occlude on the palatal mucosa

    b. *Overbite* – Maxillary incisors occluding on the mandibular mucosa or the mandibular incisors occluding on the palatal mucosa. Figure 2

illustrates overjet and overbite defined by the Salzmann evaluation index.

Figure 2: Inter-Arch Deviations – Overjet and Overbite

c. *Crossbite of the incisors* – maxillary incisors are in a lingual relation to the opposing mandibular tooth when patient is biting in terminal occlusion.

d. *Crossbite of the posterior teeth* - teeth in the buccal segments are positioned lingually or buccally out of contact with opposing teeth. Figure 3 illustrates anterior and posterior crossbites as defined by the Salzmann Evaluation Index.

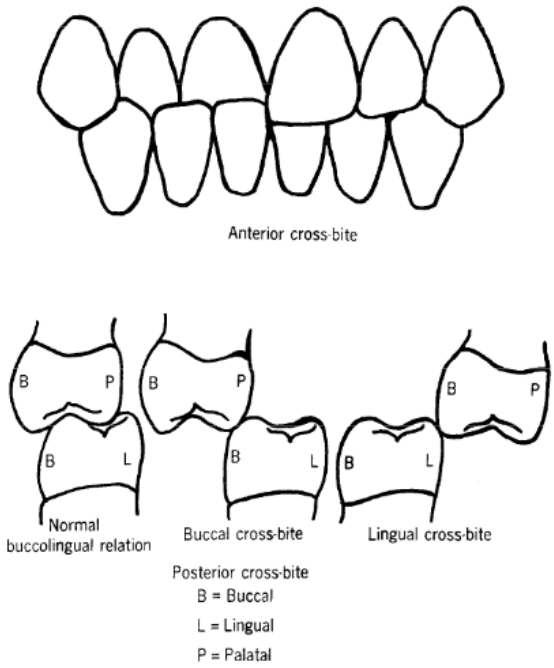
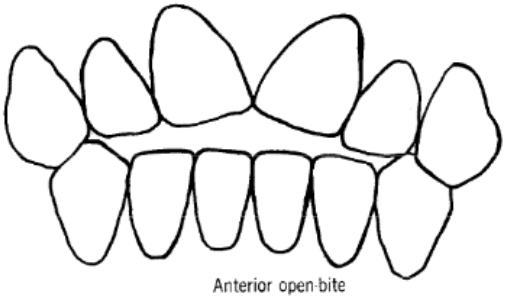


Figure 3: Inter-Arch Deviations – Anterior and Posterior Crossbites

e. *Open bite of the incisors* – vertical interarch dental separation between the maxillary and the mandibular incisors when posterior teeth in normal occlusion.

f. *Open bite of posterior teeth* – vertical interdental separation between upper and lower canines, premolars, and first molars when the rest of the teeth in dental arches are in terminal occlusion. Figure 4 illustrates anterior and posterior open bites as defined by the Salzmann Evaluation Index.



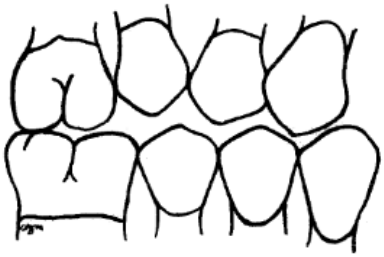


Figure 4: Inter-Arch Deviations – Anterior and Posterior Open Bites

g. *Anterior-Posterior deviation of posterior teeth* – occlusion in a forward or rearward direction to the accepted normal relation of the mandibular canine, first and second premolars, and first molar in relation to the maxillary teeth. One point is scored for each deviated tooth. Figure 5 Illustrates Anterior-posterior deviations of posterior teeth as defined by the Salzmann Evaluation Index.

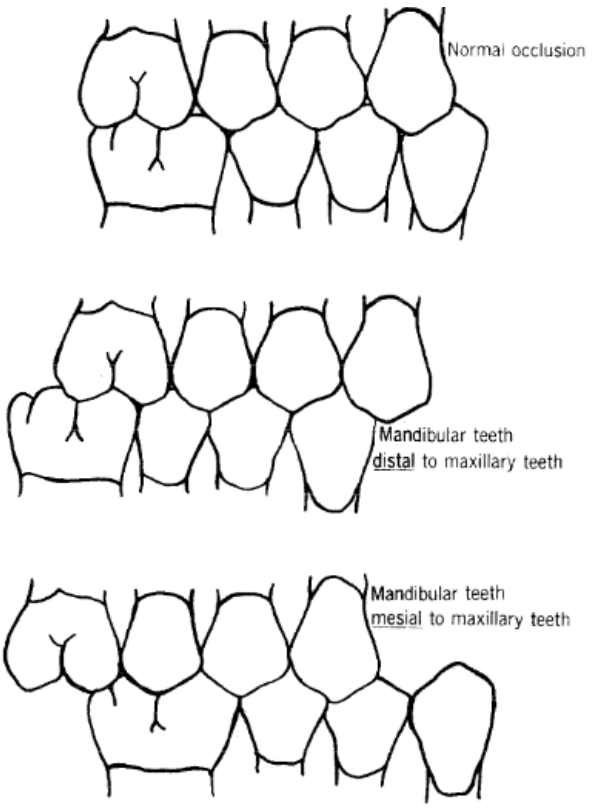


Figure 5: Inter-Arch Deviations – Anterior and Posterior Position

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ORTHODONTIC SERVICE
SALZMAN EVALUATION INDEX

PATIENT'S NAME – LAST, FIRST, MIDDLE INITIAL	MEMBER #	DATE OF BIRTH
REFERRING DENTIST		
ORTHODONTIST'S NAME	TAX ID	DATE OF ASSESSMENT

HANDICAPPING MALOCCLUSION ASSESSMENT RECORD

A. Intra - Arch Deviation

SCORE TEETH AFFECTED ONLY		MISSING	CROWDED	ROTATED	SPACING		NO.	POINT VALUE	SCORE
					OPEN	CLOSED			
MAXILLA	ANT							X2	
	POST							X1	
MANDIBLE	ANT							X1	
	POST							X1	

ANT = Anterior Teeth (4 Incisors)
POST = Posterior Teeth (Include canine, premolars and first molars)
NO. = Number of teeth affected

TOTAL SCORE

B. Inter - Arch Deviation

1. Anterior Segment

SCORE MAXILLARY TEETH AFFECTED ONLY EXCEPT OVERBITE*	OVERJET	OVERBITE	CROSSBITE	OPENBITE	NO.	POINT VALUE	SCORE
						X2	

*Score Maxillary or Mandibular Incisors
No. = Number of teeth affected

TOTAL SCORE

2. Posterior Segment

SCORE AFFECTED TEETH ONLY	RELATE MANDIBULAR TO MAXILLARY TEETH				SCORE AFFECTED MAXILLARY TEETH ONLY				NO.	POINT VALUE	SCORE
	DISTAL		MESIAL		CROSSBITE		OPENBITE				
	Right	Left	Right	Left	Right	Left	Right	Left			
CANINE										X1	
1ST PREMOLAR										X1	
2ND PREMOLAR										X1	
1ST MOLAR										X1	

TOTAL SCORE

GRAND TOTAL

No primary teeth may exist and a Salzmann Evaluation Index score of 25 points or more must be achieved to be eligible for comprehensive orthodontic treatment under the ACA Essential Health Benefits.

Figure 6: The Salzmann Evaluation Index

After Completion of the SEI, all of the points obtained from measuring the intra and inter-arch deviations are added together to determine an overall score. This score is intended to disclose whether a handicapping malocclusion is present and to assess its

severity according to the criteria and point values assigned to an individual. Individuals with higher scores, according to the SEI, have more severe malocclusion than individuals with lower scores. In Pennsylvania, a score of 25 or greater obtained on the SEI determines eligibility for orthodontic funding through Medicaid.

2.5 Medicaid Funding of Orthodontic Treatment - Past Studies

Profit, Fields, and Moray in 1997 determined estimates of malocclusion and orthodontic treatment need from the National Health and Nutrition Examination Survey (NHANES) III (Profitt, 1997). The study identified key statistics that demonstrate the vitalness of orthodontic care in the United States. Only 35% of adults had well-aligned mandibular incisors, 20% of the population had deviations from a normal bite, and 15% of the malocclusions were severe enough that both social acceptability and occlusal function were negatively affected. The article revealed that almost 60% of each ethnic group displayed orthodontic treatment need. These statistics express the importance for education about Medicaid funding for orthodontic care, allowing practitioners to decrease some of these statistics and improve the quality of life for children with severe malocclusions. The following studies reviewed data on Medicaid funding for orthodontic care throughout the United States.

C Lamb et al in 2019 evaluated the rates and trends of orthodontic treatment funded by Medicaid Insurance providers in Oklahoma (C. Lamb, 2019). Children under the age of 18 who qualified for Medicaid Insurance and had claims submitted by an orthodontist between January 2010 and December 2016 were included. The state of

Oklahoma uses the Handicapping Labio-Lingual Deviation Index (HLD) to determine malocclusion severity and subsequent orthodontic funding. Age, Sex, Race or ethnicity and county were all assessed. Study variables were evaluated using descriptive statistics and proportions and odds ratios were calculated compared using a chi-square test. The results of the study showed that children between the ages of 15-18, Females, Caucasians, and children who live in rural areas were all more likely to receive Medicaid funding for orthodontic treatment.

McKernan et al in 2013 aimed to identify and describe rates of Medicaid-funded treatment provided by Iowa Orthodontists (McKernan et al, 2013). Similar to Pennsylvania, Iowa uses the Salzmann evaluation Index to evaluation malocclusion severity of Medicaid funding. The study assessed Medicaid claim information involving children who sought orthodontic treatment between January 2008 and December 2010. The methods involved descriptive, bivariate, and multivariable logistic regression analyses performed with utilization of orthodontic services as the main outcome variable. The results presented that children who attended recall visits at their primary care provider in the previous year as well as children living in rural areas displayed high utilization of orthodontic treatment. The study verified the importance of orthodontic referrals to improve access for Medicaid insured children. Lastly, the results demonstrated that children living in geographically rural locations, traveling a greater distance for care, did not act as a barrier to treatment in the state of Iowa.

Jantraveus M. Merritt et al in 2016 assessed racial disparities in Medicaid funding for children seeking orthodontic services in Washington State. Medicaid funding in Washington State is determined using the HLD index (Jantraveus, 2016). The examiners

conducted a cross sectional study of almost 600,000 Medicaid enrolled children. Self-reported race was correlated to those who sought and initiated orthodontic treatment. Logistic regression models were used in the study to determine if nonwhites are less likely to use orthodontic services than whites. The results showed that nonwhites were significantly more likely to utilize Medicaid funding for orthodontic services than whites, opposite of the original prediction. Additional research will be required to identify reasons underlying the racial disparity recognized in this study.

The three previous articles involved orthodontic Medicaid funding for individual states. Oklahoma and Washington state both use the handicapping labio-lingual Deviation index for determining malocclusions severity, whereas Iowa uses the Salzmann Evaluation Index. Two of the studies found involve states having orthodontic treatment need indices that differ from Pennsylvania, making direct comparisons difficult to make. Although the study conducted in Iowa uses the same orthodontic treatment need index as Pennsylvania, all the studies were conducted in different states, with a unique population and individual state Medicaid programs. The three studies identified evaluating Orthodontic Medicaid Insurance in the United states only evaluated patient demographics and aimed to identify population barriers that may exist. No previous studies were conducted taking a look at the Insurance Companies to determine an inconsistency in access to care as this project aims to do. These differences highlight the importance for continued evaluation of orthodontic Medicaid funding for individual states and more specifically in Pennsylvania. While studies evaluating individual states are lacking, a unique study was found reviewing Medicaid funding throughout the country.

Minick, Gerald et al in 2017 examined and compared the changes in Medicaid funding in the United states between 2006 and 2015 (Minick, 2017). The Introduction discussed a large discrepancy existing throughout the United States when it comes to funding orthodontic treatment with Medicaid insurance. Medicaid funding decisions for orthodontic treatment occur at the state level and individual states typically use an evaluation Index to determine funding decisions. However, the evaluation index used varies by state and many of these indices are routinely being altered. The study surveyed Medicaid providers in each state to determine age limit for treatment, practitioner type and who can determine eligibility and provide treatment, records required for case review, and rate and frequency of reimbursement. The results showed that from 2006 through 2015 the expenditures and reimbursement rates varied by state, and decreased overall, limiting access to orthodontic treatment for many children. In Conclusion, the inconsistencies in Medicaid funding throughout the United states have led to a disparity in orthodontic care depending on a child's geographic location.

The identified studies evaluated the rates and trends of Medicaid insured children seeking orthodontic treatment in the United States. No studies were found evaluating the rates and trends of Pennsylvania Medicaid patients specifically. Overhead for practicing orthodontists has risen and reimbursement rates from Medicaid providers have decreased in recent years. This trend portrays the importance of continued studies in orthodontic Medicaid funding.

CHAPTER 3

AIMS OF THE INVESTIGATION

Purpose/Specific aims: This study aims to gain information on the characteristics of funding for Medicaid patients screened at Temple Orthodontics.

Hypothesis: The Study investigates 3 hypotheses

1.) There are differences between the residents Salzmann score of ≥ 25 and Insurance Providers approvals
2.) There are differences in Insurance Provider Approvals based on Insurance
3.) There are differences in Individual Insurance Provider approvals based on time of year

Hypothesis one aims to determine if a difference exists between what residents are scoring as an eligible individual for orthodontic Medicaid funding, based on the SEI, compared to the insurance provider's determination. It is believed that a mismatch is present, and the cause of this variation may be driven by multiple different factors raised in our subsequent hypothesis's.

Hypothesis two aims to determine if certain Medicaid providers are approving orthodontic coverage more often with a Salzmann Evaluation Index Score of 25 and above. Does an individual's insurance provider influence their opportunity for orthodontic coverage? If a variance does exist, it may provide orthodontists information

on Medicaid insurance providers in Pennsylvania that are more likely to fund orthodontic treatment.

Hypothesis three aims to determine if the time of year effects orthodontic coverages for individuals who have Medicaid insurance. Is there a correlation between insurance providers fiscal year and increased or decreased orthodontic coverages? This could educate the treating orthodontist on the best time of year to submit a claim. Claims submitted in January may have a higher chance of getting approved than claims submitted in December because the Insurance Provider receives financing in January and is running low in December.

These mismatches have a direct impact on patient care and have the potential to deny children funding who may greatly benefit from orthodontic treatment. This study aims to gain information on the characteristics of Medicaid funding in patients seeking orthodontic treatment and give orthodontic clinicians tools to better assist their prospective patients.

CHAPTER 4

MATERIALS AND METHODS

The screening clinic at Temple University's Orthodontic Program includes a large population of Medicaid insured patients. Determining orthodontic necessity and subsequent coverage is based on the patients Salzmann Evaluation Index (SEI) Score. This index is performed and scored by a first- or second-year resident in Temple's Orthodontic program. Upon completion of the SEI, clinical records are obtained to be submitted to the Individual Medicaid provider. Kidz Partners, Aetna Better Health, and Health Partners require Intra and extra oral photographs, a Panoramic Radiograph, a Cephalometric Radiograph, an SEI, a Treatment Plan Form, and an Intra oral scan including lingual view. Starting Fall of 2018 Temple's Orthodontic Program went completely digital, moving from impressions and plaster cast to digital scans and 3D virtual models. Therefore, all of our models are sent as printed screenshots of our 3D electronic scans. Keystone Mercy, United Health Care, and United Concordia require all the same records but exclude an intra oral scan. These six providers represent the majority of patients requesting treatment in our clinic.

This study evaluated individuals who were under the age of 21, had a Medicaid insurance provider and were eligible for and had a SEI scored by a Resident at Temple's Orthodontic screening clinic between January 1st, 2018 and Dec 31st, 2019. For the purpose of this study only scores 25 and above were analyzed.

Individuals were excluded from the study if the child had private insurance or no insurance, no SEI score completed, or an SEI score below 25.

An IRB protocol was submitted for approval before collecting the results, the response from the committee stated that no IRB approval status was needed to continue. Following this response, the following information was obtained from Axium for each individual screened at Temple Orthodontics' from January 1st, 2018 to Dec 31st, 2019 using a search tool by the Department of Technology at Temple Dental School: Age, Gender, Chart Number, Insurance provider, and the time of year the screening appointment occurred. This information was entered into an excel sheet. The student investigator evaluated the excel sheet and eliminated individuals who did not meet the inclusion criteria. All remaining subjects were evaluated using Axium to retrospectively determine each subjects SEI score and the Insurance Provider funding decision. This information was entered into the excel sheet for statistical analysis.

Residents SEI scores of 25 and above were correlated with Insurance Providers response to determine an inconsistency percentage. Individual Insurance Providers were compared and contrasted between each other to determine if certain providers approve a higher percentage of patients or if certain providers have greater inconsistencies with residents SEI scores using the ANOVA Test. The ANOVA Test was found to be significant, and a Post Hoc T test was run. Lastly, each Insurance provider's fiscal year was correlated to the percentage of patients funded per month using an ANOVA Test. The ANOVA Test was found to be significant, and a Post Hoc T test was run.

After preliminary results were obtained, a logistical regression analysis was performed comparing Company 2 and Company 3. These two companies provide Insurance to the majority of the Medicaid patients screened at Temple Orthodontics. The aim of the logistical regression was to determine if there was a correlation between

increasing Salzman scores and increased likelihood of an individual being granted funding. Additionally, the logistical regression provides information to potentially differentiate Company 2 and Company 3.

CHAPTER 5

RESULTS

The total number of individuals screened at Temple Orthodontic Department between Jan 1st, 2018 and Dec 31st, 2019 was 2,571. After eliminating all individuals who did not meet the inclusion criteria the total sample was 1,133. Six Insurance Providers were included with the following distribution of screenings: Company 1: (54 individuals), Company 2: (570 Individuals), Company 3: (356 Individuals), Company 4: (21 individuals), Company 5: (27 Individuals), and Company 6: (105 Individuals). Figure 7 displays the distribution of Medicaid patients by Insurance Provider. Company 2 and Company 3 constitute 83% of all Medicaid patients screened at Temple Orthodontics.

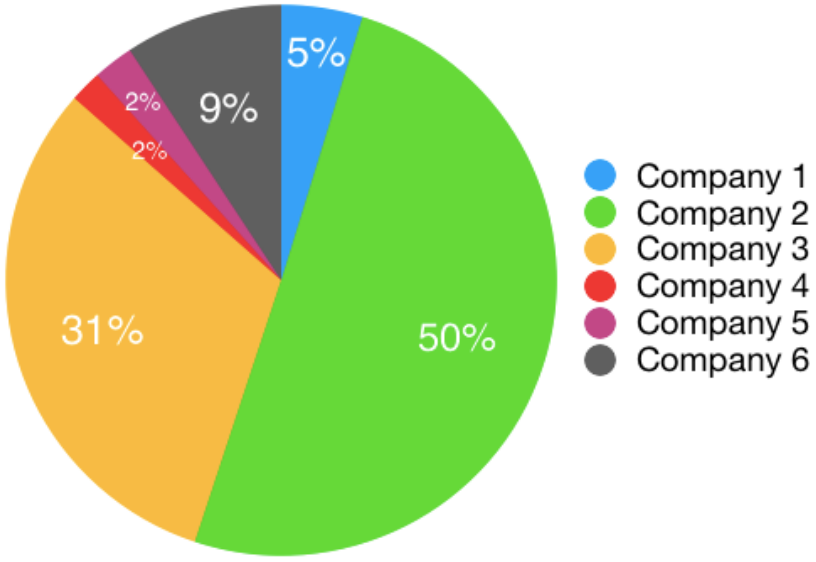

Figure 7: Distribution of Medicaid Patients by Insurance Provider

Hypothesis number one sought to determine if inconsistencies existed between SEI scores of 25 and above submitted from Temple Orthodontics' and approval decisions made by the Insurance Provider. Table 1 displays the percentages for all six Insurance companies, portraying how often the insurance provider agreed with Temple's SEI score of 25 and above and approved funding. Company 3 showed the highest similarity, approving 69.7% of the individuals submitted from Temple Orthodontics with a score of 25 and above. Company 2 and 4 showed the lowest similarity, only approving 39.8% and 33.3% respectively. The overall approval agreement, regardless of individual Insurance Provider was 52.3%.

Table 1: *Percent Approvals of Submitted Salzmann Scores 25 and above*

Company	**Mean**	**N**	**Std. Deviation**
1	59.3%	54	0.496
2	39.8%	570	0.490
3	69.7%	356	0.460
4	33.3%	21	0.483
5	55.6%	27	0.506
6	60.0%	105	0.492
Overall Approval Rate	52.3%	1,133	0.500

- N: # of individuals who obtained a SEI score of 25 or above

Hypothesis number two aimed to determine if there was variance in Insurance Provider funding decisions between individual insurance providers. The ANOVA Test produced a p-value of 0.000 signifying that there are quite significant differences in approval ratings among companies, displayed in Table 2. Due to low p value: a Post Hoc T Test was performed and revealed which companies differed from each other. Table 3 portrays the inter-Company comparisons; a Company was significantly different from another Company with a p-value of <0.05. Company 1 showed significant differences from Company 2 and 4. Company 2 showed significant differences from Company 3 and 6. Company 3 and 4 and Company 4 and 6 when compared to each other were significantly different. Company 2 and Company 3 displayed the lowest p-value of 0.000. It is important to note that Company 2 and Company 3 included 570 and 356 individuals respectively, making up 82% of the total sample.

Table 2: *Differences in Approval ratings among companies – ANOVA Test*

Anova	**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig**
Beween Groups	21.272	5	4.254	18x342	0.000
Within Groups	261.405	1127	0.232		
Total	282.676	1132			

Table 3: *Differences in approval ratings – Post Hoc T Test (P-Values)*

Company	1	2	3	4	5	6
1		0.005	0.139	0.037	0.744	0.927
2	0.005		0.000	0.544	0.098	0.000
3	0.139	0.000		0.001	0.143	0.071
4	0.037	0.544	0.001		0.113	0.021
5	0.744	0.098	0.143	0.113		0.669
6	0.927	0.000	0.071	0.021	0.669	

After preliminary analysis was performed and there was a significant difference between the two largest Medicaid Insurance Providers, it was decided to conduct a logistic regression analysis. The goal of this analysis was to prove that for every increase in Salzman score there was an increased likelihood that an Insurance Provider would approve funding. Table 4 shows the results of the logistic regression for Company 2, every 1-point increase in SEI score increases the likelihood of approval by 1.087 times. Table 5 shows the results of the logistic regression for Company 3, every 1-point increase in SEI score increases the likelihood of approval by 1.142 times. These results show that there is a significantly higher correlation between increased SEI scores and the likelihood of approvals for Company 3 than for Company 2.

Table 4: *Linear Regression Analysis - Company 2*

Company 2

Omnibus Tests of Model Coefficients				
		Chi-square	df	Sig.
Step 1	Step	30.699	1	0.000
	Block	30.699	1	0.000
	Model	30.699	1	0.000
*Overall Model is Significant				

Variables in the Equation							
		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1	SEI Score	0.084	0.016	28.206	1	0.000	1.087
	Constant	-3.003	0.496	36.669	1	0.000	0.050

Table 5: *Linear Regression Analysis - Company 3*

Company 3

Omnibus Tests of Model Coefficients				
		Chi-square	df	Sig.
Step 1	Step	26.800	1	0.000
	Block	26.800	1	0.000
	Model	26.800	1	0.000
*Overall Model is Significant				

Variables in the Equation							
		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1	SEI Score	0.132	0.029	20.180	1	0.000	1.142
	Constant	-3.080	0.856	12.924	1	0.000	0.046

Hypothesis number three aimed to determine if the time of year had an effect on Insurance Provider funding decisions. After completion of the ANOVA Test, the only Company which showed significant difference when comparing month to month was Company 3, having a p-value of 0.036, all other Insurance Providers had a p-value of >0.05. Due to Company 3 showing statistically significant differences per month, a Post Hoc T test was performed to determine which months were different from each other. Table 6 outlines the acceptance rate per month for Company 3 over the years 2018 and 2019. The highest percentage of approvals was in May at 73.2% and the lowest percent of approvals was in November at 30.3%. Table 7 shows the inter-month comparisons, a

month was significantly different from another month if the p-value of <0.05. May displayed a significantly higher acceptance rate than March, September, October, and November. January showed a significantly higher acceptance rate than October and November. Finally; February, June, July, august, and December showed a significantly higher acceptance rate than November.

Table 6: *Acceptance Rate per Month – Company 3*

Month	**N**	**Acceptance Rate**
1	50	63.5%
2	23	58.6%
3	36	45.9%
4	27	53.3%
5	41	73.2%
6	41	54.8%
7	41	53.7%
8	69	55.2%
9	56	46.3%
10	65	43.1%
11	39	30.3%
12	38	57.6%
Total	526	53.0%

N - # of individuals who had a SEI score submitted each month

Table 7: *Difference in Acceptance Rate per Month – Post Hoc T Test – Company 3*

1											
2	0.673										
3	0.100	0.302									
4	0.372	0.682	0.544								
5	0.348	0.226	0.016	0.096							
6	0.397	0.747	0.430	0.904	0.091						
7	0.343	0.680	0.492	0978	0.075	0.919					
8	0.381	0.759	0.376	0.869	0.075	0.967	0.881				
9	0.075	0.280	0.974	0.533	0.009	0.406	0.473	0.343			
10	0.032	0.169	0.785	0.358	0.003	0.245	0.296	0.190	0.733		
11	0.003	0.025	0.187	0.066	0.000	0.034	0.044	0.022	0.144	0.236	
12	0.593	0.934	0.327	0.734	0.178	0.807	0.735	0.824	0.303	0.180	0.026
Month	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**

CHAPTER 6

DISCUSSION

The state of Pennsylvania uses the Salzmann Evaluation Index to determine funding decisions for Medicaid patients seeking orthodontic treatment. Orthodontist's are educated on how to properly complete this index, and along with the proper records, submit the index to the patient's Medicaid Insurance Provider for a funding decision. Temple Orthodontics noticed a discrepancy between submitted scores the state deemed fundable and the final decision of the Insurance Provider. The objective of this study was to assess whether a significant difference existed and to identify characteristics of individual Medicaid providers to better assist children seeking orthodontic treatment.

American orthodontic programs often utilize Medicaid access to care as their predominant source, and Temple Orthodontics is no exception. Located in a low-income neighborhood, Temple's orthodontic program provides care to a high number of Medicaid insured individuals. Screenings were performed, records were submitted, and a funding decision was received for 1,576 Medicaid insured individuals between January 1st, 2018 and Dec 31st, 2019. The large population provides a unique source material for identifying characteristics, trends, and potential problems with Medicaid providers.

The first aim of this study was to evaluate if differences existed between SEI scores submitted by Temple residents determined as eligible for orthodontic funding compared to the final decision of the Insurance Provider. The overall agreement percentage between what residents were submitting as eligible for funding and the final funding decision from the insurance provider was 53%. This demonstrates that significant

differences exist between orthodontic physicians and Medicaid Insurance Providers. According to Gray and Dimirjian in 1977 the Salzmann index was found to be highly reproducible and sensitive over the entire range of occlusions. Additionally, Otuyemi and Noar in 1996 demonstrated that the SEI had excellent levels of reliability. Knowing that the SEI is reproducible and repeatable makes the 53% agreement between the residents and the Insurance Providers alarming.

The second aim of the study was to determine if the percentage of disagreement varied depending on which Medicaid Insurance Provider an individual had. Agreement percentages between the 6 Company's ranged from the 33.3% - 69.7%. The distribution of individuals based on Medicaid providers is portrayed in Figure 7. The vast majority of individuals who presented to Temple's Orthodontic screening clinic belonged to Company 2 and Company 3, making up almost 83% of the population analyzed. Company 3 showed the highest level of similarity to Temple residents SEI scores, agreeing 69.7% of the time. This shows that Company 3 is determining funding decisions similarly to Temple residents. Company 2 showed the second lowest level of similarity, agreeing only 39.8% of the time. The low level of agreement raises specific concerns for Company 2 because they provide Medicaid Insurance to nearly half (785) of the individuals who presented to Temple's orthodontic screening clinic. There must be something widely different between the way Temple residents are making funding decisions and Company 2. Possibly, Company 2 is completing the SEI differently than Temple residents or they are using a unique index to make funding decisions examiners are unaware of. These results are upsetting, because they show that a high number of

individuals the orthodontist is defining as medically in need of orthodontic treatment are not receiving funding.

The second aim used a P-value of <0.05 to determine if individual Medicaid providers were statistically different from each other. No individual Company was statistically different from all other companies. Company 2 and Company 4 made similar funding decisions, and both had the lowest level of agreement when compared to Temple residents, 33.3% and 39.8% respectively. Company 1, Company 3, and Company 6 made similar funding decisions, and all had the higher levels of agreement, 59.3%, 69.7%, and 60.0% respectively. Therefore, the results make sense that Company 2 and Company 4 displayed statistically different funding decisions than Company's 1, 3, and 6 (P-values <0.05). Company 5 was not statistically different from any other Company. The most interesting results are between Company 2 and Company 3 due to the fact that they provide insurance to a large percentage of the included population.

A logistical regression analysis was performed to further evaluate Company 2 and Company 3, specifically analyzing the submitted SEI scores. The goal of the analysis was to prove that for every increase in SEI submitted to the Insurance provider there was a progressive increase in likelihood of funding. The analysis demonstrated that for Company 2, every increase in SEI score increases the likelihood of approval by 1.087 times. For Company 3, every increase in SEI score increases the likelihood of approval by 1.142 times. There is a higher correlation for Company 3 when relating funding decisions to increasing SEI scores. The results suggest that Company 3 is most likely performing the SEI in a similar way to orthodontic physicians and using the scores obtained to determine funding decisions. Alternatively, Company 2 has a significantly

lower correlation and may be performing the SEI in a different way to the orthodontic physician or using a different analysis when determining funding decisions. These results raise access to care concerns for Medicaid patients seeking orthodontic treatment in Pennsylvania, possibly suggesting an individual seek one Medicaid provider over the other.

The final aim of the study evaluated whether the time of year effects whether an individual with Medicaid insurance seeking orthodontic treatment obtains funding. The hope of this aim was to educate orthodontic physicians on the best time of year to submit a claim. This information could lead to a correlation between a Medicaid Provider's Fiscal year and increased chances of an individual obtaining funding. However, after preliminary analysis was performed, of the 6 Company's, only Company 3 showed statistically significant differences month to month. All other Company's did not demonstrate an association between a certain month and increased likelihood of funding.

Company 3 had an initial p value of 0.035, demonstrating that several months were statistically different from other months in the rate that they were funding orthodontic treatment. Figures 8-10 displays the acceptance rate percentage per month for Company 3

Figures 8-10: Acceptance Rate Percentage per Month – Company 3

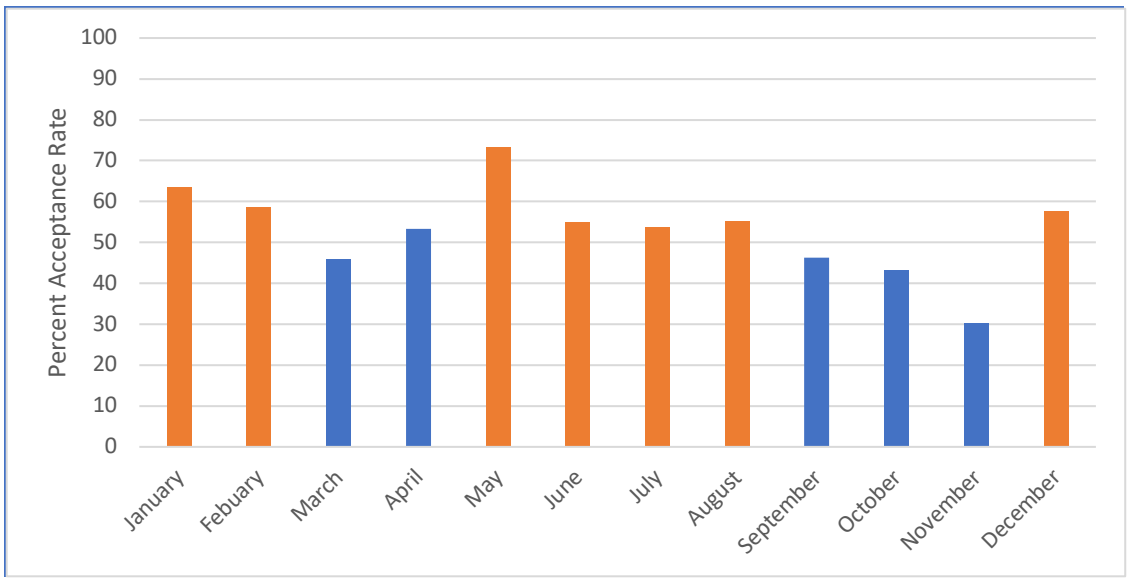

Figure 8: Months Significantly Higher than November shown in orange

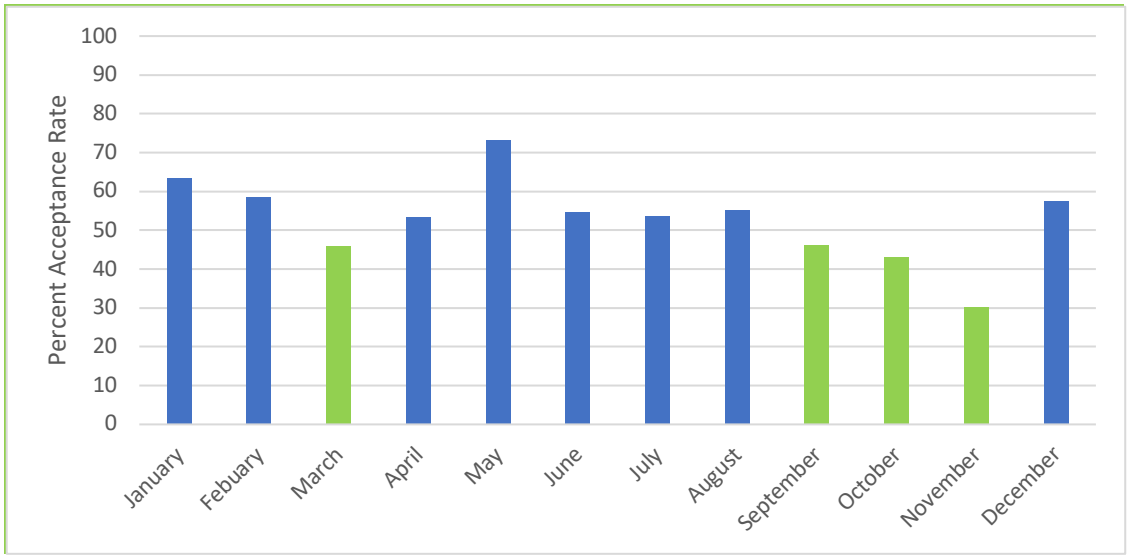

Figure 9: Months Significantly lower than May shown in green

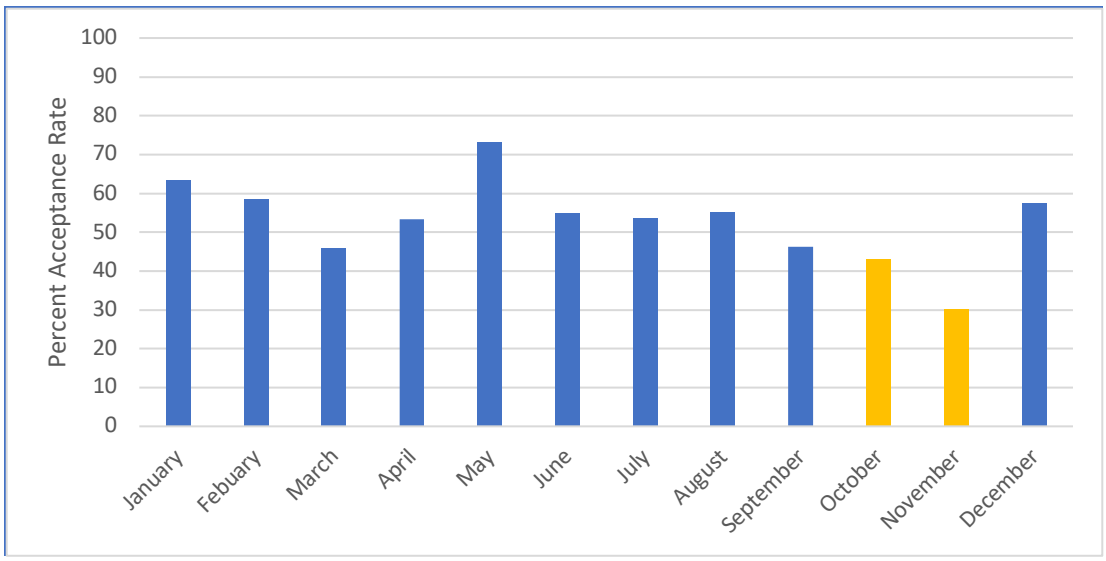

Figure 10: Months Significantly lower than January shown in yellow

Company 3 had their highest approval agreement for the month of May at 73.2% and their lowest approval agreement in November at 30.3%. When comparing month to month, Figure 8 shows May was statistically different and displayed higher levels of approval agreement than March, September, October, and November. Figure 10 shows January displayed significantly higher acceptance rate than October and November. Lastly, Figure 9 presents 5 months showed a statistically significant higher acceptance rate than November, including February, June, July, August, and December. No obvious trend was observed throughout the calendar year despite several months having statistically different approval agreements. Possibly, certain months like May and January, had many individuals with very high SEI scores which increase the likelihood of funding, and months like November had many individuals with SEI scores right on the cuff, leading to a lower percentage of agreement that month between the orthodontic clinician and the Insurance Provider.

When applying for Medicaid insurance it can be a difficult task to decide which Provider to choose. Depending on your location the number of Companies providing coverage varies and in a highly populated area such as North Philadelphia there are multiple insurance providers. It may be advantageous, based off of the results of this study, to recommend one Provider over another in regard to orthodontic coverage. This information has the potential to help someone make a more educated decision on which Medicaid provider best fits their individual needs.

Study limitations and Suggestions for Future Research

One study limitation was the present study only observed Medicaid individuals at one location. The population that enters Temple Orthodontics' screening clinic presents with unique occlusions and may not fully represent the state as a whole. Varying areas of the state may have increased or decreased levels of malocclusion which could possibly produce higher or lower levels of agreement between the orthodontic physician and the Medicaid provider accordingly. However, the study did have a large sample size which decreases a lot of potential bias from solely looking at one office.

Another limitation of this study is the Salzmann Evaluation Index. Previous studies have reported high reproducibility and repeatability; however, this index does present with some inherent subjectivity that may cause some of the disagreement between the insurance provider and the orthodontic physician. A recent proposal by the AAO is to implement a national index of automatic qualifiers. If an individual met one of these automatic qualifiers, they would subsequently obtain orthodontic funding. These auto-

qualifiers include; 9 mm or more of overjet, 3.5mm or more of reverse overjet, anterior and or posterior crossbites of 3 or more teeth per arch, lateral or anterior open bite 2-4 mm or more, of 4 or more teeth per arch, impinging overbite with evidence of occlusal contact into the opposing soft tissue, impactions where eruption is impeded by extraction is not indicated (excluding third molars), Jaws and/or dentition which are profoundly affected by a congenital or developmental disorder (craniofacial anomalies), two or more congenitally missing teeth (except 3rd molars) of at least one tooth per quadrant, crowding or spacing of 10 mm or more. Although it is believed that this index may reduce subjectively and produce greater agreements between the clinician and the Insurance Provider than the SEI, future research would need to be performed to provide evidence that this index would provide similar or better access to care for the Medicaid individuals seeking orthodontic treatment.

All residents at Temple Orthodontics are trained on how to complete a SEI at the beginning of their residency program. Additionally, a calibration exercise is performed, and resident's consistently have an inter-examiner agreement of greater than 90%. However, there remains a limitation when residents move from learning to perform a SEI score on example cases and moving to real life patients. When a child is sitting in the chair and obtains a SEI of 24, which does not constitute funding, there is a global desire to find a way to increase that score to 25 or above and theoretically increase the child's chances of obtaining funding for orthodontic treatment. This would increase the level of disagreement between the Insurance Provider and the orthodontist. However, this is another limitation that the study overcomes due to its high sample size. Additionally, this

limitation was present for all Medicaid providers and would have no effect on why they responded differently.

Future research to increase education on the potential limitations to access to care for Medicaid patients seeking orthodontic treatment in Pennsylvania is needed. It may be advantageous to expand on the present study and do a statewide or nationwide evaluation of individuals with Medicaid. A broader analysis may help standardize how an orthodontist performs their initial screening and demonstrate nationwide that orthodontic Medicaid insurance may need to be reformed to help eliminate individuals in need of treatment being denied funding.

Additionally, using the present sample, a more in-depth analysis could further evaluate all the individuals who obtained a fundable score of 25 or above yet were denied treatment. This subset population could be broken down by Insurance provider and possible similarities could be identified between individuals who are scoring high yet not receiving funding for treatment. This has the incredible impact of eliminating the worst-case scenario, which is when an individual who should obtain funding is wrongfully denied for unknown reasons.

The goal of this research thesis was to increase understanding of the characteristics of orthodontic Medicaid funding in Pennsylvania. The information obtained from this research has the potential to impact how Medicaid patients are educated, and hopefully lead to increased access to care.

CHAPTER 7

CONCLUSIONS

In conclusion, the results showed that there were statistically significant differences between eligibility determined by the SEI and subsequent funding by the Insurance Provider for Medicaid individuals seeking Orthodontic Treatment in Philadelphia, Pennsylvania.

- Company 2 and 4 fund a significantly lower percentage of individuals than Company 1, 3, and 6 with a SEI score of ≥25
- Company 1, 3, 6 fund a significantly higher percentage of individuals than Company 2 and 4 with a SEI score of ≥25
- The time of year was only significant for Company 3, although no overall trend was observed

These Findings suggest that Company 2 and 4 are evaluating individuals in a significantly different way from Orthodontic physicians raising potential access to care concerns.

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APPENDIX A: INITIAL DATA ANALYSIS

Rows are Salzman (0->25, 1- 25 or greater
Columns are insurance (0-denied, 1-approved)
Company Name is on the top line

Company	(All)		All Companies
Count of Pt. PatientId	**Column Labels**		
Row Labels	**0**	**1**	**Grand Total**
0	392	51	443
1	541	592	1133
Grand Total	933	643	1576
Company	1		
Count of Pt. PatientId	**Column Labels**		
Row Labels	**0**	**1**	**Grand Total**
0	18	4	22
1	22	32	54
Grand Total	40	36	76
Company	2		
Count of Pt. PatientId	**Column Labels**		
Row Labels	**0**	**1**	**Grand Total**
0	197	18	215
1	343	227	570
Grand Total	540	245	785
Company	3		
Count of Pt. PatientId	**Column Labels**		
Row Labels	**0**	**1**	**Grand Total**
0	131	21	152
1	108	248	356
Grand Total	239	269	508
Company	4		
Count of Pt. PatientId	**Column Labels**		
Row Labels	**0**	**1**	**Grand Total**

0	7	3	10
1	14	7	21
Grand Total	21	10	31
Company	5		
Count of Pt. PatientId	**Column Labels**		
Row Labels	**0**	**1**	**Grand Total**
0	13		13
1	12	15	27
Grand Total	25	15	40
Company	6		
Count of Pt. PatientId	**Column Labels**		
Row Labels	**0**	**1**	**Grand Total**
0	26	5	31
1	42	63	105
Grand Total	68	68	136

APPENDIX B: RAW COLLECTED DATA

#	Pt. Sex	Tx. Provider	Tx.Dr. Last	Pt. BirthDate	Pt. Age	Tx. Date	Month	Company	Salzman Score	Salzman(1>25)	Approved/Denied	Approval(1)
1	Male	F418	Sciote	5/26/00	20	5/23/19	5	2	2	0	denied	0
2	Male	G325	Britton	10/24/05	14	3/27/18	3	3	3	0	denied	0
3	Male	F633	Godel	6/24/02	18	4/26/18	4	2	4	0	denied	0
4	Male	F418	Sciote	11/30/00	19	4/24/19	4	2	4	0		
5	Male	F633	Godel	8/22/01	18	2/1/18	2	5	4	0		
6	Female	G365	Arino	4/5/00	20	9/7/18	9	2	5	0	denied	0
7	Male	F418	Sciote	9/21/04	15	10/16/19	10	2	5	0		
8	Female	F418	Sciote	12/26/03	16	2/11/19	2	2	6	0	denied	0
9	Female	G411	Herman	3/3/05	15	8/5/19	8	2	6	0	denied	0
10	Female	F418	Sciote	11/4/07	12	12/6/18	12	3	6	0	denied	0
11	Male	F418	Sciote	12/18/03	16	4/18/19	4	3	6	0	denied	0
…												
1804	Female	G327	Mirman	11/17/00	19	6/7/19	6	3	67	1	Approved	1