Barriers to Dental Care: How the Current Dental Practice Laws and Workforce Model are Hindering Equal Access to Dental Care for the Citizens of Indiana

by: Audra Bogucki
Department of Liberal Studies

ABSTRACT:
Indiana has a problem with the lack of adequate access to dental care. There are not enough dentists to care for its citizens' dental needs and the cost of care is unaffordable for many Hoosiers. In this paper we will examine three possible solutions. One option is to do nothing and hope that dental insurance carriers will increase benefits and lower out of pocket costs. Additionally, we can also hope that the number of employers offering dental benefits will increase. The second solution is to increase the number of dentists educated and trained in Indiana. IUPUI has the only school in Indiana offering a Doctor of Dental Surgery (DDS) degree. However, increasing this number is harder than it sounds as the cost to run a dental school is high and students must complete a minimum of eight years of college to receive the degree. The third option is to expand the dental workforce model. The Indiana legislators could change the laws to allow independent practice of dental hygiene and the practice of dental therapy. This would expand access to dental care by allowing hygienists to open dental hygiene offices. Current hygienists could take a two year course to learn basic restorative techniques and become dental therapists. A dental therapist office is less expensive as patients visiting such an office need not pay the higher dentist fees. The saving could be passed along to Hoosiers through more affordable care. The states can then more readily open dental clinics since the cost to run these clinics is lower thus increasing the number of dental offices all around the state.

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Outline of Content

I. The problem is that Hoosiers lack adequate access to dental care. According to a Kaiser survey in 2015, Indiana only has about 50% of the dentists needed to care for its citizens' dental needs. In addition, the number of dentists is decreasing.[1]

II. Three possible solutions

A. One option is to do nothing. We can hope that dental insurance carriers will increase benefits and lower out of pocket costs. We can also hope that the number of employers offering dental benefits will increase.

B. The first alternative solution is to increase the number of dentists educated and trained in Indiana. Currently, IUPUI is the only school in Indiana offering a Doctor of Dental Surgery (DDS) degree. For this to happen, the Indiana legislature has to pass funding to increase the number of dental schools. Then Dental school requires a minimum of four years and four years of pre-dental education.

C. The second alternative is to expand the dental workforce model. Dental hygienists need increased independence to practice dental hygiene independent of a dentist. Expanding access to dental care requires an increased number of dental offices in counties that lack dental care. To do this more quickly, hygienist could take a two year course to learn basic restorative techniques and become dental therapists.

III. The recommendation of this report is that the Indiana General Assembly should purse alternative C. Indiana would see a rapid expansion of its dental workforce. The cost of care would be lower as patients visiting such an office need not pay the higher dentist fees. The states can then more readily open dental clinics since the cost to run these clinics is lower.

Introduction to the Problem

Many Hoosiers cannot afford to see a dentist other than for routine visits, and many more cannot afford this basic service. In 2014, a study showed that "less than half of the US population uses dental services annually."2 In fact, an increasing number of Americans are unable to afford dental care. The ADA published an article in 2012 revealing that only half of employers who provide medical benefits provide dental benefits to their employees and that this number is decreasing.3 Additionally, the publics ability to access dentistry is negatively impacted because there is not enough dentists to serve all of Indiana. Until recently, the laws in Indiana required that a dentist be in the building before a patient is seated in a dental chair. Recently, this rule was modified by the 2014 Indiana General Assembly, but rules regulating dental practice are too restrictive. The law still makes it necessary for a location that wants dental services to have a dentist serving its population. However, because Indiana has a deficit of dentists they do not need to practice in less profitable locations, creating under-served areas and communities. All these factor perpetuate this access to care problem.

Why is this so important? Lack of access to dental care leads to a delay in diagnosis and therefore more people with advanced disease when and if it is treated. Along with dental issues comes the impact of untreated dental disease on the patient's overall health and quality of life. Dental disease that is left untreated can lead to pain, infection, tooth loss, poor nutrition, low-birth weight babies, increased risk of many systemic diseases such as heart disease and diabetes, and death. What can be done about this? We can change the current dental practice workforce model. States such as Minnesota, Alaska, and Maine have added mid-level dental professionals to their dental practice model to expand access to care to under-served populations. The W. K. Kellogg Foundation reports that twenty-six other states are pursuing or exploring the possibility of adding a mid-level dental professional to their practice models to increase access to dental care.[4] On August 7, 2015, the Commission on Dental Accreditation authorized the establishment of an accreditation process for dental therapy education programs.[5] It is now time for Indiana to change its laws to allow such a model. Mid-level dental professionals will decrease patient costs and increase access to

care. An expanded practice model will have a positive effect on Indiana's public health outcome.

Definition of the Problem

Under-served populations suffer the most serious effects from untreated dental disease since they delay care the longest. The under-served people face barriers to dental care due to inadequate financial resources and a lack of dental professionals within their region. Too often we hear of children dying from treatable dental issues like 12-year-old Deamonte Driver. It was reported in "For Want of a Dentist," that he died February 2007, when bacteria from an abscessed tooth traveled to his brain.[6] Less reported are the adults who die from dental disease such as the 2011 and 2014 deaths in Ohio. In these two cases the men died from dental infections that spread to their heart or brain.[7,8]

Prior to death and hospitalization, dental disease causes pain. The pain comes from dental infections such as dental cavities and gum disease. An article from Indiana University Center for Health Policy stated that, "the most common chronic disease that a child will encounter is dental caries (cavities), as it is five times more common than asthma and seven times more common than hay fever."[3] All too often, the under-served delay treatment due to cost or lack of access and they are left with only the option of extraction.[9] Dental pain and tooth loss contribute to poor nutrition because they inhibit a person's ability to properly chew food, this causes the individual to seek out foods that do not require much chewing.[3,10] This leaves out many vital foods for proper nutrition and has a negative effect on his or her overall health.

Indiana's under-served face increased risk of developing many systemic diseases. Research has revealed a relationship between chronic infections and cardiovascular disease. Three of the chronic diseases showing a relationship are cavities, gum (periodontal) disease, and tooth root (periapical) infections. An article in the Journal of the American Dental Association reported an increased risk of cardiovascular disease for participants who had elevated levels of antibodies from periodontal pathogens. Additionally, the study's findings show this increased risk has association to higher levels of periodontal bacteria, thus explaining why plaques from around the heart were being found to contain periodontal pathogens.[11] The U.S. Surgeon General reported

that periodontal bacteria become systemic via the circulatory system. These bacteria enter the circulatory system when people with periodontal infections chew foods and cause infected gum tissues to open and bleed. This creates entry points for oral bacteria to access other areas of the body leaving patients at risk for heart attacks and strokes.[10]

Diabetes is another systemic disease with a relationship to oral disease. Mealey's meta-analysis of studies from the last fifty years shows a correlation between periodontal disease and diabetes. The report shows that, "evidence in the medical literature also supports the role of inflammation as a major component in the pathogenesis of diabetes and diabetic complications." Periodontal infection causes chronic inflammation of gum tissue. These two chronic diseases affect each other. If a patient has uncontrolled diabetes, it is likely that he or she will have an increasing severity of gum disease. Conversely, if a diabetic has severe periodontal disease, it can make controlling their diabetes more difficult.[12]

Inflammation from chronic periodontal disease has links "adverse outcomes of pregnancy," according to the U.S. Surgeon General Report. The report reveals that bacterial infections causes the immune system to release hormones. The Surgeon General warns this causes pre-term labor. He also states that many studies have shown that "mothers of low-birth-weight infants" born prematurely are more likely to have more severe periodontal disease than mothers with full term healthy babies." The leading cause of death for children less than five years of age is complications from pre-term birth.[13]

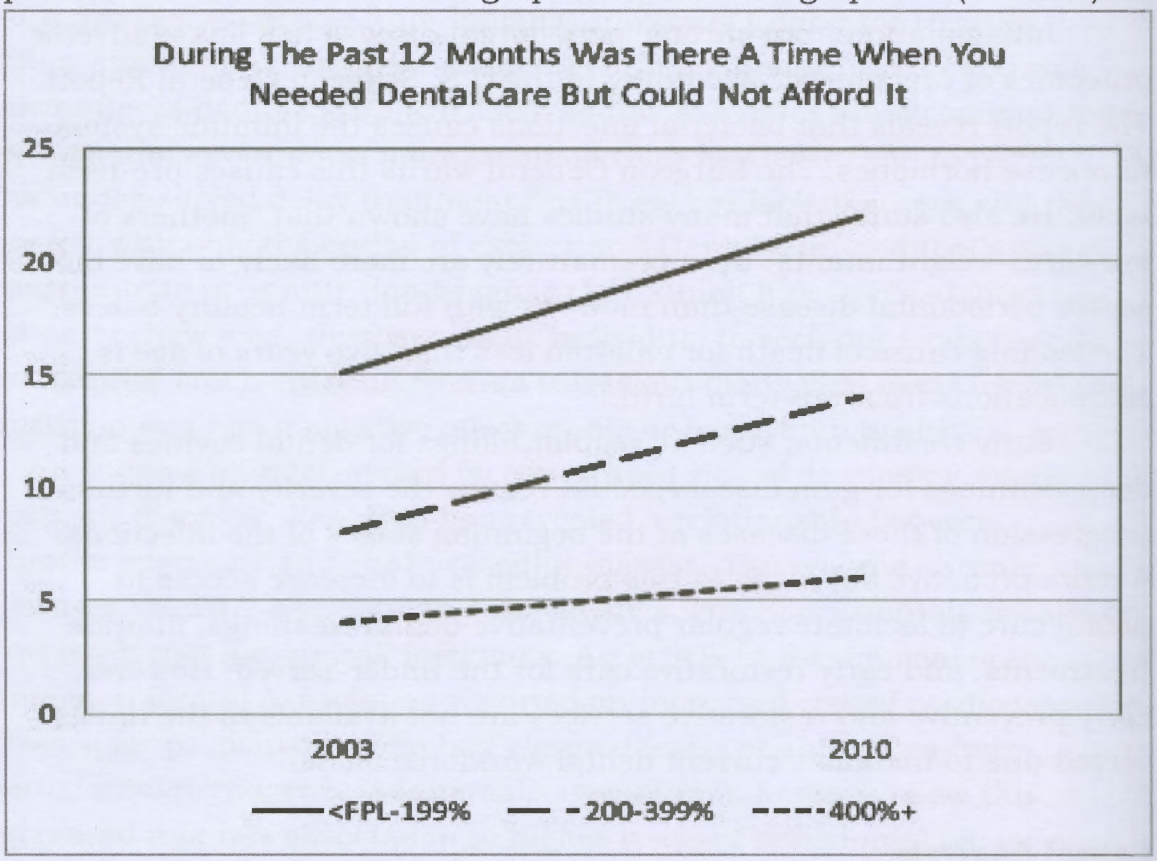
Early treatments, such as regular fillings for dental cavities and deep cleanings for gum disease, could reduce the severity and further progression of these diseases at the beginning stages of the infections. A more proactive approach to this problem is to increase access to dental care to facilitate regular preventative dental cleanings, fluoride treatments, and early restorative care for the under-served. However, early preventive and restorative services are not available to the under-served due to Indiana's current dental workforce model.

Causal Analysis

Economics

Many Hoosiers find themselves unable to afford regular dental care

and facing in a financial crisis when they can no longer delay treatment. They seek out a dentist who can squeeze them into his or her schedule or go to the hospital emergency department. A national study found that from 2000-2008; there were 61,439 hospitalizations for dental issues. The majority of these attributed to periapical abscesses (root infections) and 66 of those patients died. They also note an increased rate of hospitalization from dental infections.[14] The follow-up study from 2008 to 2010, found 4,049,361 emergency department visits due to dental conditions and 101 patients died.[15] A report by the American Dental Association found only about 38.6 percent of Americans had a dental visit in 2009. This percentage has not varied much in the previous decade. It was observed that 21 percent of people in the 199 percent or less range of the Federal Poverty Level (FPL) reported not seeking dental care when needed because they could not afford it. This trend has been increasing since 2003, when this number was at about 15 percent. The rates for all demographics are trending upward (Table 1.)[16]



Source: Breaking Down Barriers to Oral Health for All Americans: The Role of Finance

Medicaid is a program designed to help the under-served access needed care and enrollment has been rising in Indiana. The Indianapolis Business Journal reported that in 2014, "More than 1,094,000 Hoosiers are now enrolled in Medicaid," an increase of 40,577 people since March 2013.[17] Children in the Indiana Medicaid plan receive good benefits; however, all Medicaid recipients do not always use their dental benefits. A major reason for this is that it can be difficult for them to find a dentist.[16] They find only limited numbers of dentists in Indiana willing to accept Medicaid.[17,18] The W.K. Kellogg Foundation states, "that approximately 80 percent of dentists do not accept Medicaid."[4] The ADA noted this effect on care for Medicaid enrollees, "Despite the fact that tooth decay is the most common, chronic childhood disease and is preventable, dental services constitute, on average, two percent of state Medicaid expenditures. By comparison, dental care accounts for nine percent of private sector health expenses." Low reimbursement rates to provider by the state may be one cause of the disparity.

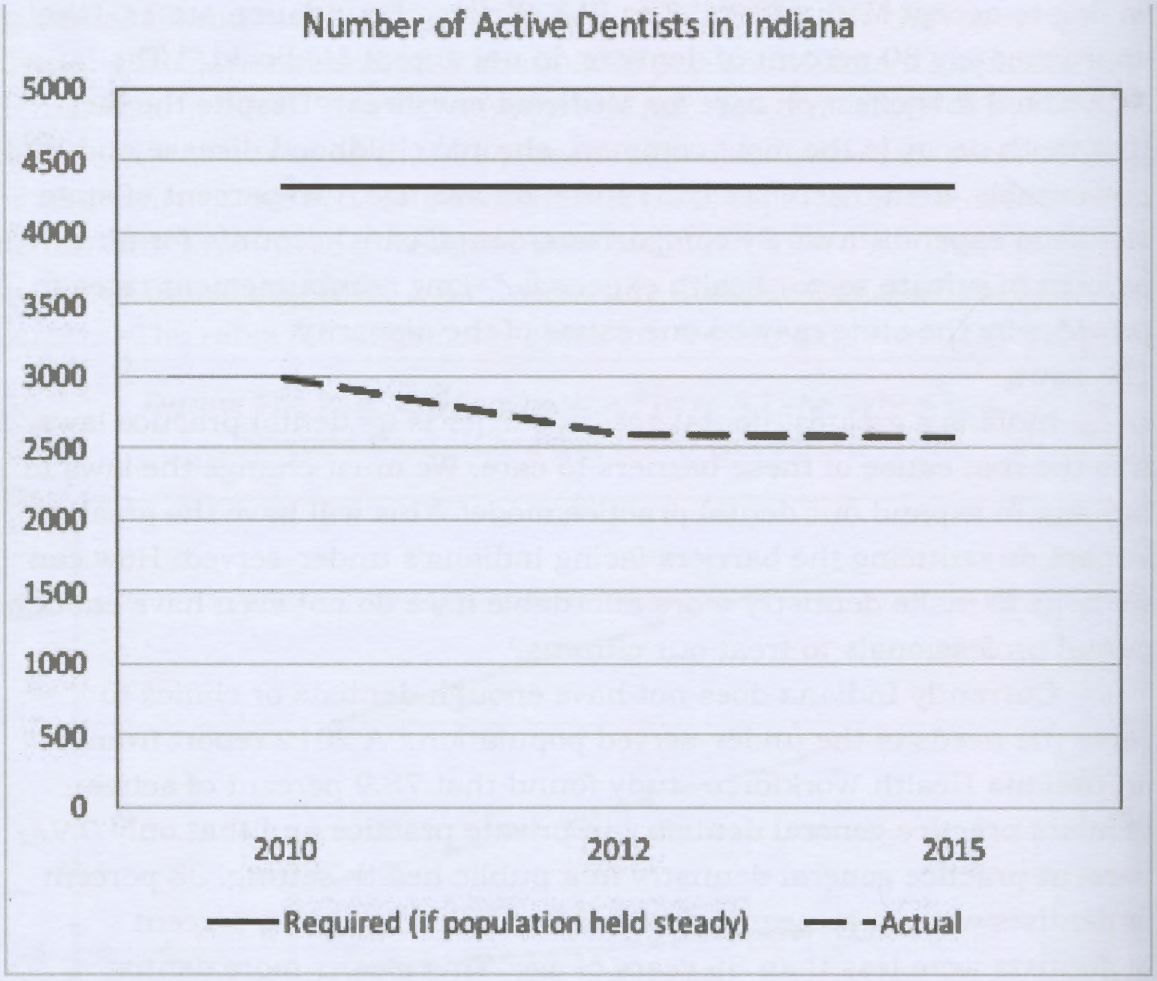
The Laws

Indiana's greatest dental access barrier is its dental practice laws. It is the root cause of these barriers to care. We must change the laws in Indiana to expand our dental practice model. This will have the greatest impact on reducing the barriers facing Indiana's under-served. How can we hope to make dentistry more affordable if we do not even have enough dental professionals to treat our citizens?

Currently Indiana does not have enough dentists or clinics to serve the needs of the under-served population.[1] A 2012 report from an Indiana Health Workforce study found that 78.9 percent of active dentists practice general dentistry in private practice and that only 0.9 percent practice general dentistry in a public health setting. 38 percent of dentists were at or near retirement but only around 16 percent of dentists were less than 35 years of age. This means more dentist are leaving the profession than entering. Additionally, dental care is not evenly available throughout the state; it was found that 64 out of Indiana's 92 counties each have less than 20 dentists in comparison to the 18 most populous counties each with between 51-597 dentists working in their county lines. In fact, over half of the total number of dentists in Indiana practice in just seven of these counties.[19]

We need to consider how many patients a single dentist can

care for in one year. AFTCO, a dental practice consulting firm, reports that a dental practice should have 1,500 patients per dentist.[21] When applying AFCTO recommendation to the number of dentists in each Indiana county verses the population of the county, 85 of 92 Indiana counties in 2012, had a deficit of dentists.[19] Table 2, shows the number of general dentist practicing between 2010 and 2015 declined.[1,19,20] This is consistent with the Kaiser study which said Indiana had only 51.6% of the dentists required to meet our citizen's needs.[1]



Source: Kaiser Study

As of 2012 there were 4,583 licensed dental hygienists actively practicing preventive dentistry in Indiana.[21] The survey cited earlier said Indiana requires the same number of dental hygienists as dentists, which was 4,323.[21,23] We have an ample number of hygienists to provide preventive dental services to the under-served. Yet due to our current laws, hygienists cannot work independent of a dentist.

The restrictions placed on the practice of dental hygiene need removed. If we look at a law that recently "expanded" its practice we can more easily see the negative effect of these restrictions. The Indiana House Enrolled act No.1061 defines the term "Dental hygienist" as an individual who is "educated and trained in the science and art of maintaining the dental health of the individual or community through prophylactic or preventive measures applied to the teeth and adjacent structures." On July 1, 2014, Indiana passed prescriptive supervision laws for dental hygienists in Indiana. The law defines "Prescriptive supervision" as dental hygiene that is practiced when a licensed dentist is not physically present in the facility when patient care is provided by the dental hygienist who has at least 2 years of active practice under the direct supervision of a licensed dentist and "Direct supervision" as the practice of dental hygiene when a licensed dentist is physically present in the facility when care is provided. However, the prescriptive practice of dental hygiene is limited because the law requires that a patient must receive an examination by a licensed dentist and any appropriate care within the previous seven months. In accordance with the law, the dentist must issue a written authorization for the care to be provided in a dental office and the patient must be informed that a licensed dentist will not be in the office while the dental hygienist is providing care. If the care is provided in a setting outside of a dental office, the dentist must first give the patient a comprehensive oral examination and then the dentist may give the patient a written prescription for dental hygiene care that is valid for forty-five days. Prescriptive supervision leaves the practice of dental hygiene under the control of dentist. The patient is still required to be seen by a dentist prior to receiving preventive care. Because we do not have enough dentists, many Hoosiers continue to have access to care issues.[24]

Since access to care issues are not alleviated under the new law, additional action is require. The preventive training of hygienists is not enough to meet all of the complex needs of the under-served. The mid-level provider can alleviated this barrier, however Indiana does not have schools to train such practitioners and our laws do not allow for this type of practice model. The Indiana legislature must expand the independence of hygienists and include the emerging mid-level dental provider to the dental workforce.

Proposed Solutions

Status Quo

One option is to do nothing and hope that dental insurance companies increase their benefits. We can also hope that employers will see the value of offering good dental benefits to their employees thus increasing the affordability of dental care. However, this option does not address inadequate numbers of dentist serving the citizens of Indiana. The ADA's position is that there isn't a shortage of dentist, but instead, areas of "Dental Deserts." They have an action plan to deal with these deserts that are in rural areas and inner cities. The plan is to set up Community Dental Health Coordinators (CDHC) in to these communities. The CDHC would be there to help people in dental deserts to find a dentist, but they will not be there to provide dental services.[25]

Increase the Number of Dentists

Indiana is currently seeing a decrease in the number of active licensed dentists; the second option is to increase the number of dentists educated in Indiana to meet the needs of our state.[25,19] Our state currently only has one dental school, located at Indiana University/ Purdue University Indianapolis.[1] It graduates about one hundred dentists per year.[3] Unfortunately, not all of these dentists will practice in Indiana.[26] Many leave since they come from other states and countries. Indiana therefore needs to open another dental school that offers a DDS degree, but this option is very expensive. A University of Central Florida study published on the American Dental Education website reported that the estimated the cost is about 50 million dollars.[3] The cost to run this school is around 5 million dollars per year and it may be hard to open the new school when you consider that six dental schools have closed in the last few decades due to a lack of financial support. The main reason for the lack of support is the high cost-to-benefit ratio.[26] Additionally, opening a new dental school may not be the quickest solution because a future dentist must spend four years in an undergraduate pre-dental program and then another four years at a DDS program.

Expanding the Dental Workforce Model:

Increasing the Independence of Dental Hygienists

The number of active licensed dental hygienists is increasing.[23] In addition to this, the level of education a hygienist receives is also

increasing because academic institutions, such as Indiana University, educate their dental hygiene students to the level of Bachelors of Dental Hygiene. These two factors combined help to increase the viability of using the dental hygienists as more than just an auxiliary to the dentist. Indiana's laws insure that hygienists continue their education after graduation and that they practice hygiene safely.[24] There are 38 states that allow or have pending laws that give hygienist varying amount of independence to practice without a dentist. Several states require a collaborative agreement, others limit areas and scope of independent care, and others just require the hygienist to be employed by a healthcare facility. In 1987 Colorado became the first state to allow unsupervised practice of dental hygiene then in 2008 Maine became the second. After almost thirty years of independent practice, hygienists in Colorado have proven that unsupervised practice of dental hygiene is safe for the patient and expands access to dental care.[4]

Bring Dental Therapists Model to Indiana

Alaska, Minnesota and Maine have passing laws to add dental therapists to their dental practice models as a means to addressed disparities in dental care. Dental therapist's provides basic restorative care and simple extractions to under-served populations.[4] Dental therapists fill a similar position in dentistry to that of the nurse practitioner in medicine. The dental therapist must refer patients to a qualified dental or health care professional if the care that the patient requires exceeds his or her expertise. In 2014, the Minnesota Legislature published Early Impacts of Dental Therapists in Minnesota: Report to the Minnesota Legislature. It shows that dental therapists are able to significantly increase the number new patients seen in public health clinics, reduce wait times for dental services, decrease the use of emergency room services for dental care, and reduce the cost to the public healthcare system. Additionally, the report states that "Dental therapists appear to be practicing safely, and clinics report improved quality and high patient satisfaction with dental therapist services."[27]

The cost to start training the new dental therapist is low since these schools can be added to programs that already have bachelors level dental hygiene programs. This minimizes the cost since much of the needed infrastructure would already be in place. The time to implement

this option is also low since Dental hygienist only require an additional 2 years of school to attain the Masters of Dental Therapy.

Recommendation

Indiana must expand its dental practice model to include the independent practice of dental hygienist and dental therapist in order to be able to address the access to care barriers in Indiana. Without enough trained and educated dental professionals, care cannot reach all Hoosiers. This option increases in the number of new patients being served, decrease in emergency department visits for dental issues, and reduces of cost dental care. Expanded autonomy for dental hygienist and practice models that include dental therapists will quickly solve the access to care issues for the under-served populations.[27]

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