

# Literature Review

## A review of strategies to increase access to oral health services

Breyana Davis, MPH, CHES and Sara Plaspohl, DrPH, CHES

HealthMPowers, Norcross, Georgia and College of Health Sciences, Armstrong State University, Savannah, Georgia

Corresponding Author: Breyana Davis • HealthMPowers, Inc. • 250 Scientific Drive, Suite 500, Norcross, GA 30092 • 770-817-1733 • [breya.davis@yahoo.com](mailto:breya.davis@yahoo.com)

### ABSTRACT

**Background:** Leading Health Indicators (LHIs), a subset of objectives for Healthy People 2020, were selected to communicate at-risk health issues and actions that can be taken to address them. Nationally, the number of children, adolescents, and adults who visited the dentist in the past year has decreased, suggesting that oral health continues to be a problem caused by barriers preventing access to oral health services. This review aimed to identify strategies to increase access to oral health services that will be useful in moving toward the LHI objectives.

**Methods:** Preliminary research was conducted on the LHI via the Healthy People 2020 website. Health-related, peer-reviewed articles were selected and evaluated to determine current strategies used to increase access to oral health services that would lead to achievement of the LHI objectives.

**Results:** Evidenced-based literature shows that economic, educational, and personal barriers prevent access to oral health services. Through health promotion and educational interventions, however, good oral health can be established. Such improvements will lead to attaining the LHI objectives in moving towards the target goals of Healthy People 2020.

**Conclusions:** Since primary prevention and early intervention procedures lead to improved oral health, such methods can be useful in reaching the LHI objectives and the target goal of Healthy People 2020.

**Key words:** Oral health, services, health promotion, prevention, education, disease, dental care

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### INTRODUCTION

*Healthy People 2020* identifies “oral health” as a leading health indicator (LHI), involved in helping people stay healthy. The regard to this LHI, the objective is to increase the number of children, adolescents, and adults who have used the oral health care system in the past year (Oral Health, 2014). Poor oral health can lead to serious consequences, which can include, for all age groups, dental caries, periodontal disease, cleft lip and palate, oral pain, and oral pharyngeal cancers. Oral diseases also cause secondary diseases to develop in other areas. With regular dental care, however, oral diseases can be prevented (Isong, Zuckerman, Rao, Kuhlthau, Winickoff, & Perrin, 2010; Maupomé, 2013; Oral Health, 2014). According to the National Health Interview Survey (2008), there are safe and effective measures to prevent the most common dental diseases, but access to oral health care remains a substantial problem for the U.S. population (Bloom, Simile, Adams, & Cohen, 2012). Through strategies for health promotion and coordination of care, more patients have been able to access oral health services, leading to healthier lifestyles. In addition, identifying strategies to increase access to oral health services has proven effective in promoting good oral health, which helps to move toward the LHI objective.

### METHODS

This literature review is based on bibliographic searches of PubMed to gather information and summarize evidence-based strategies identified to increase access to oral health services. Based on preliminary research, peer-reviewed articles published within five years, the earliest being in the year 2010, were selected to support the Healthy People 2020 oral health LHIs. Qualitative research was used to provide insight and develop hypotheses about the LHI objective and to determine if specific strategies and interventions would be effective in moving toward the objective. Twenty articles were identified; however, only fifteen provided key findings in improving access to oral health services. In particular, selected articles examined effective health promotion programs, barriers to oral health services, and methods for health education intervention. Some articles were excluded based on their failure to report sufficient statistics or data and describing incomplete or ambiguous methods. The selected articles are in the list of references.

### RESULTS

Various factors influence whether or not patients will access oral health services. Many of these are dependent on the individual and are related to patient desires or needs for oral health services. If a patient is not diagnosed with an oral disease, they are less likely to visit a dentist for routine dental care (Oral Health, 2014; White, 2012). Economic factors may also hinder patients from receiving oral health services because they may not have the resources to pay for the services rendered, or they may not be willing to pay (Isong, Dantas, Gerard, & Kuhlthau, 2015; Isong, Zuckerman, Rao, Kuhlthau, Winickoff, & Perrin, 2010). Further, some individuals may be insured but unaware of their dental benefits. In addition, they may be skeptical about the out-of-pocket expenses they may accrue if they receive oral health services because most dental coverage is for basic, preventive care, not treatment. Some services that may be appropriate, whether restorative or cosmetic, may not be covered by dental insurance.

There is a direct relationship between the oral health status of patients and their socioeconomic and education status (Maupomé, 2013; Oral Health, 2014; Pahel, Rozier, Stearnes, & Quiñonez, 2011; White, 2012). These affected individuals and families have poorer oral health and decreased access to dental care than those with more affluent and educated backgrounds. Individuals who lack dental coverage are less likely to receive dental care (Iida & Rozier, 2013; Isong, Dantas, Gerard, & Kuhlthau, 2015; Isong, Zuckerman, Rao, Kuhlthau, Winickoff, & Perrin, 2010). These individuals lack the access and resources for preventive oral services. Further, many children who belong to low-income families may have dental insurance and access to dental care, but visit the dentist's office irregularly. They may be unaware of the importance of dental hygiene on overall health. For example, a case study was conducted in Chelsea, Massachusetts, to explore factors contributing to poor oral health. A qualitative study design, which included interviews with parents of preschool children living in Chelsea, early childhood providers, and allied health professionals, was used. The study examined dental attitudes, barriers, and proposed solutions to problems. The results showed that, in Chelsea, there was a perceived limited access to oral health services and resources. Thus, there are opportunities for improvement through oral health policies, community outreach, and improved care coordination (Isong, Dantas, Gerard, & Kuhlthau, 2015).

In addition, there has been a decrease in utilization of dental services because individuals are using less private insurance coverage and more public insurance. Public insurance companies are beginning to limit coverage and services. As a result, the oral health needs of patients may not be met because there are guidelines limiting services, such as one dental cleaning per year. The American Dental Association has estimated that 30% of the population has difficulty accessing dental services through the current private system for delivery of dental care (Glassman, Harrington, Mertz, & Namakian, 2012). Other states place limits on the type and amount of dental services that are

covered. Reports of dental visits show that 19.9% of children with private dental insurance did not have a preventive visit in the previous year and that 24.3% of children enrolled in public dental insurance had not had a preventive visit (Askelson et al., 2015; Wall, Vujicic, & Nasseh, 2012). To improve oral health measures for prevention of dental caries, diseases in the mouth and throat, and oral cancers, there is an increasing need for regular attendance of patients in dental offices. In recent studies, the use of virtual dental homes has been effective in improving oral health and reducing financial costs. A pilot program, first introduced at nine sites in California, takes place in settings such as schools, community centers, and residential facilities. With this system, oral health services are brought to underserved populations, and duties for oral health professionals are expanded. At least 50% of individuals served by the virtual dental home achieve and sustain good oral health (Glassman, Harrington, Mertz, & Namakian, 2012).

Further, for children, patterns of dental use correlate positively with those of their parents. Therefore, parents who are less likely to obtain routine dental care are also less likely to bring their children to dentist offices for routine visits. Patient education can improve prevention. When parents defer seeking dental care because of costs and other factors, their children are at an increased risk for deferred care as well (Isong, Zuckerman, Rao, Kuhlthau, Winickoff, & Perrin, 2010). In a qualitative study, the 2007 National Health Interview Survey was used to sample children aged 2 to 17 with matching parents. Through logistic regressions, associations between parents' and children's use of dental services and deferred dental care related to costs were examined. In the last year, 77% of children and 64% of parents had had a dental visit. Children were more likely to have had a dental visit when their parents had one; similarly, they were more likely to defer dental care if their parents did so as well. As a result, it was suggested that strategies to eliminate barriers should target parents in order to address increasing the use of oral health services (Isong, Zuckerman, Rao, Kuhlthau, Winickoff, & Perrin, 2010).

Personal factors, such as lack of knowledge, can prevent individuals from having good oral health. For parents, 25% were not aware that children should have a visit to a dentist by age 1 year (Iida & Rozier, 2013). Further, when children receive preventive dental care, it is often not in a timely manner; many parents take their children to the dentist only in times of emergency. Children with dental caries suffer consequences such as tooth pain and difficulty eating or sleeping, which increases the risk of damage to their permanent teeth (Pahel, Rozier, Stearnes, & Quiñonez, 2011). Although dental caries are infectious, they can be prevented with routine visits to the dentist. In North Carolina, longitudinal claims and enrollment data were used to estimate the effectiveness of a medical office-based preventive program, Into the Mouths of Babies (IMB), a preventive dentistry program for children enrolled in Medicaid in a North Carolina medical office. This program

involves fluoride applications to reducing treatments related to dental caries. For children up to 6 years of age, treatment caused a 17% reduction in dental caries relative to children with no visits. Thus, the program was effective in reducing dental caries and contributed to improved oral health (Pahel, Rozier, Stearnes, & Quiñonez, 2011).

Currently, the fastest growing population is the geriatric community, and, of all age groups, this group reports the longest time interval since their last dental visit. Based on the results from the National Health Interview Survey (2008), the utilization rate for the elderly decreased from 73.1% in 1997 to 69.6% in 2010 and remained unchanged from 2000 to 2007 (Wall, Vujicic, & Nasseh, 2012). In addition, most elderly people live on fixed incomes and have a higher risk of stress and chronic illnesses, which can affect their overall health, including their oral health. Older adults may not be concerned with attending a dental appointment because they have other financial obligations, including those for medications; for doctor's appointments; and for living expenses. As a result, a limited income prevents them from accessing oral health services. Oral health can be costly for the elderly because dental benefits are normally funded privately by an employer and because most states do not include benefits for adults in their Medicaid programs. Therefore, many elderly consumers are required to pay for oral health services without insurance and some may opt to go without care if they do not believe dental care is essential.

## DISCUSSION

Most barriers that hinder access to routine dental care can be overcome through appropriate education. Since primary prevention leads to improved oral health, it should begin early in life (Batliner et al., 2014; Maupomé, 2013; Oral Health, 2014). Patients should learn brushing techniques, flossing methods, the importance of screenings, and methods to prevent secondary conditions from occurring. For example, people should receive cleanings twice a year and have their teeth examined to make sure they are growing in properly. Fear is a leading factor that prevents people from visiting the dentist for preventive care or an oral health problem; however, dental visits should occur every six months. These visits should include counseling on dietary education, prevention of dental trauma, and oral hygiene (Iida & Rozier, 2013). Introducing oral health promotion programs that demonstrate hygiene techniques is an effective way to increase attendance to dentists. Classes could be taught by dentists and dental aides who can properly educate patients. The primary goal is increase attendance and thereby prevent secondary oral health conditions and other illnesses. For example, patients—children, adolescents, and adults—can be taught the importance of brushing and flossing in educational messages presented via videos in dentists' offices. As a result, patients learn that proper dental hygiene helps to prevent oral diseases and promotes a healthier lifestyle.

Care coordination within the pediatric primary care setting can increase access to dental care and attendance in the dental office. This can be accomplished by accessing school-aged children before their oral health has deteriorated. Many individuals do not visit their dentist often enough and are not particularly concerned about their oral health; however, most make wellness visits to their primary care physician (Askelson et al., 2015; White, 2012). In particular, most parents visit the doctor's office because they are taking their children for wellness visits. As a result, it is effective to have primary care physicians counseling parents and their children on the importance of oral health, dental hygiene, and preventive services. Additionally, since some areas have limited access to dentists, the American Academy of Dental Pediatrics recommends that children at low risk for dental disease receive preventive oral health services in the primary care setting until a dental referral is possible (Quinonez, Kranz, Long, & Rozier, 2014). In addition, primary care physicians aid in referring patients to dentists and reminding them of regular visits. As discussed, primary prevention is essential to oral health (Askelson et al., 2015; Batliner et al., 2014; Maupomé, 2013; Oral Health, 2014). For example, IMB proved to be effective, as results showed a decrease in caries and an increase in referrals, which contributed to improved oral health. In addition, physician referrals offer an opportunity to provide establishment of a dental home in order to create continuous, coordinated, and comprehensive services for oral health care. Some states now allow provision of oral health preventive services in medical offices (Quinonez, Kranz, Long, & Rozier, 2014; White, 2012). As a result, primary care physicians can educate their patients on the importance of oral health screenings, provide dental referrals, and, when appropriate, provide limited procedures.

Oral health policies have become effective strategies that can be used to increase attendance in dental offices to ensure optimum oral health. In Chelsea, Massachusetts, oral health policies have been established to require routine dental exams in early childhood programs (Isong, Dantas, Gerard, & Kuhlthau, 2015). In these programs, staff members guide parents so that they can ensure their children receive routine dental care. They also assist with providing transportation, referrals to dentists, education classes targeted for troubled areas, and other support that may be needed. This method is effective because there is increased social support and community involvement. In addition, members of Women, Infants and Children (WIC, a public health program) and their families benefit by receiving oral health education and tips on optimizing their dental hygiene. The most effective way to involve the community is through health promotion. Dental practices and offices can engage the community and educate targeted groups through outreach activities, health fairs, and other community events. These events are beneficial because brochures that include information about accessing oral health services, ways to prevent secondary conditions, and other information that supports good oral health can be distributed.

Motivational interviewing (MI), a behavioral intervention used to change specific behaviors, focuses on patient-centeredness (Weinstein et al., 2014). This counseling technique is effective in health promotion because patients are in control of their behavioral changes. In this case, MI involves an individual's readiness to change their oral health habits with regard to a new targeted behavior (Batliner et al., 2014; Weinstein et al., 2014). This intervention supports open discussions centered on changing at-risk behaviors that contribute to poor oral health. Generally, most patients are told how to change their behaviors, what to avoid, and ways to improve in order to promote a healthier lifestyle. However, with this approach, patients are encouraged through self-efficacy and purpose, and they are held accountable for their personal change. This approach, which involves the patient and the dentist, can increase attendance in dental offices. It is similar to stage theory because patients prepare for an action and explore reasons to take action. More than 40 studies have utilized patient-centered approaches, such as MI and other intervention methods, which can be used to change the oral health of patients. In the studies presented, two different methods were used: brief MI and traditional Health Education (HE). These intervention methods provide oral health education, assist with changing at-risk behaviors, and help individuals seek professional dental care (Weinstein et al., 2014). With MI methods, counselors used qualitative strategies by presenting questions for discussion, using reflective listening, and asserting positive affirmations. In contrast, the HE intervention is not patient-centered; the methods are more interactive and counselors take a more active role. With this method, supplementary materials such as videos, handouts, and presentations are used; the counselor can follow up with questions or concerns of the patients.

There is a correlation between parents who regularly attend their dentist for routine visits and with bringing their children, and this leads to increased attendance in dental offices. Based on the National Health Interview Survey (2007), in which children from ages 2 to 17 years were sampled, of the parents who had a dental visit in the previous year, 85.9% of their children also had a visit. This increases the attendance rate of patients in the dental offices and allows dental professionals to educate their patients about oral hygiene. On the contrary, of the parents without a history of a dental visit, only 62.8% of their children had a dentist visit. As a result, these patients would be more susceptible to caries, oral pain, and other oral issues. The results show that parental oral health-seeking behaviors have an effect on the development of the oral health behaviors of their children (Isong, Zuckerman, Rao, Kuhlthau, Winickoff, & Perrin, 2010). Since health professionals can educate patients through family-centered strategies within the context of a dental home, long-term strategies such as health promotion centered on the family unit would be effective in changing oral health behaviors.

Creating a virtual dental home in a community setting is beneficial in increasing attendance rates in dental offices.

This new model is effective in delivering dental care to a variety of population groups and improving access to oral health care (Glassman, Harrington, Mertz, & Namakian, 2012). Promising strategies include bringing oral health services to vulnerable populations through educational, social, and general health services; expanding duties for existing oral health professionals; promoting prevention and early intervention oral health procedures; and creating a support network for community members.

As discussed, care coordination has been used to increase access to dental care and attendance in dental offices within the pediatric primary care setting; however, this intervention was effective only for patients who were infants and toddlers (Askelson et al., 2015; White, 2012). Further research and data are needed to determine if care coordination is effective in improving the oral health status of children older than three. In addition, some studies lacked information pertaining to the clinical status of the patients. The oral health status and needs of some children were based on maternal reports and not confirmed by clinical examination (Iida & Rozier 2013). Data are needed to support the existence of health issues. With most of the evaluated studies, it is possible that bias occurred. For example, physicians were more likely to provide IMB services to children with existing early childhood caries (ECC) or those considered at high risk for ECC (Quinonez, Kranz, Long, & Rozier, 2014; White, 2012). Selection bias can be eliminated if the population is sampled properly, and if accurate data on exposure and outcome are collected to define a measure of association. Also, investigator bias likely occurred during data collection and analysis when all interviews were conducted in-person, via telephone, and using English. Because of this, such subjects are likely to generate the desired result. It is best to use a form of anonymity. Lastly, the National Health Interview Survey relies on parental self-report, including recall of the frequency of dental visits in the previous twelve months (Wall, Vujicic, & Nasseh, 2012). These data may not be accurate, as subjects may have difficulty recalling past or present exposures or behaviors.

## CONCLUSIONS

Evidenced-based results support the need for health promotion programs and health education interventions in communities to improve access to oral health services. For example, increased oral screenings and recurring reminders increase access to oral care and attendance in dental offices (Askelson et al., 2015; Batliner et al., 2014; Glassman, Harrington, Mertz, & Namakian, 2012; Iida, & Rozier, 2013; Isong, Zuckerman, Rao, Kuhlthau, Winickoff, & Perrin, 2010). Additionally, school-based dental screening has been endorsed by the World Health Organization to facilitate early detection and timely intervention (Nelson, Mandelaris, Ferretti, Heima, Spiekerman, & Milgrom, 2012). Thus, through established health promotion strategies and increased access to oral services, patients can maintain good oral health. Primary prevention and early detection



leads to improved oral health, and introduction of oral health promotion programs and other intervention methods increases attendance in dentist offices. These methods can be useful in moving the LHI objective toward the Healthy People 2020 target goal. The primary goal is to increase access to dental offices and oral health services to prevent oral health conditions from occurring. As a result, patients are learning proper dental hygiene, which helps to prevent oral diseases and promotes a healthier lifestyle. In addition, bringing services to underserved communities helps to promote coordination of care and to instill supportive networks in the community. By decreasing and eliminating barriers, patients will be able to access dental care and other resources on a regular basis to maintain good oral health.

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### References

- Askelson, N., Chi, D., Momany, E., Kuthy, R., Ortiz, C., Hanson, J., & Damiano, P. (2015). Encouraging early preventive dental visits for preschool-aged children enrolled in medicaid: Using the Extended Parallel Process Model to conduct formative research. *Journal of Public Health Dentistry*, 1-11.
- Batliner, T., Fehringer, K., Tiwari, T., Henderson, W., Wilson, A., Brega, A., & Albino, J. (2014). Motivational interviewing with American Indian mothers to prevent early childhood caries: Study design and methodology of a randomized control trial. *Trials*. 2014 Apr 14;15:125.
- Bloom B, Simile CM, Adams PF, Cohen RA. (2012). Oral health status and access to oral health care for U.S. adults aged 18–64: National Health Interview Survey, 2008. *Vital Health Stat* 10. 2012 Jul;(253):1-22.
- Glassman, P., Harrington, M., Mertz, E., & Namakian, M. (2012). The virtual dental home: Implications for policy and strategy. *J Calif Dent Assoc*. 2012 Jul;40(7):605-611.
- Iida, H., & Rozier, R. (2013). Mother-perceived social capital and children's oral health and use of dental care in the United States. *American Journal of Public Health*, 103(3), 480-487.
- Isong, I., Dantas, L., Gerard, M., & Kuhlthau, K. (2015). Oral health disparities and unmet dental needs among preschool children in Chelsea, MA: Exploring mechanisms, defining solutions. *J Oral Hyg Health*. 2014;2. pii: 1000138.
- Isong, I., Zuckerman, K., Rao, S., Kuhlthau, K., Winickoff, J., & Perrin, J. (2010). Association between parents' and children's use of oral health services. *American Academy of Pediatrics*, 125(3), 502-508.
- Maupomé, G. (2013). Dental plaque, preventive care, and tooth brushing associated with dental caries in primary teeth in schoolchildren ages 6–9 years of Leon, Nicaragua. *Medical Science Monitor*, 1019-1026.
- Nelson, S., Mandelaris, J., Ferretti, G., Heima, M., Spiekerman, C., & Milgrom, P. (2012). School screening and parental reminders in increasing dental care for children in need: A retrospective cohort study. *Journal of Public Health Dentistry*, 1-15.
- Oral Health. (2014). Retrieved April 15, 2015, from <https://www.healthypeople.gov/2020/leading-health-indicators/2020-lhi-topics/Oral-Health>
- Pahel, B., Rozier, G., Stearnes, S., & Quiñonez, R. (2011). Effectiveness of preventive dental treatments by physicians for young medicaid enrollees. *Pediatrics*, 127(3), E682- E689.
- Quinonez, R., Kranz, A., Long, M., & Rozier, R. (2014). Care coordination among pediatricians and dentists: A cross-sectional study of opinions of North Carolina dentists. *BMC Oral Health*, 1-8.
- Wall, T., Vujicic, M., & Nasseh, K. (2012). Recent trends in the utilization of dental care in the United States. *Journal of Dental Education*, 76(8), 1020-1027.
- Weinstein, P., Milgrom, P., Riedy, C., Mancl, L., Garson, G., Huebner, C., . . . Nykamp, A (2014). Treatment fidelity of brief motivational interviewing and health education in a randomized clinical trial to promote dental attendance of low-income mothers and children: Community-based intergenerational oral health study "baby smiles." *BMC Oral Health*, 1-8.
- White, B. (2012). Factors influencing demand for dental services: Population, demographics, disease, insurance. *Journal of Dental Education*, 76(8), 996-1007.

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