

Investigation of the Beliefs and Experiences of Key Stakeholders in Massachusetts related to medical/dental integration programs and practices

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Erratum

Added missing table

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Abstract

INTRODUCTION Oral health care access for vulnerable populations is an important public health issue in America and is becoming a priority for discussion among policy makers, health care educational institutions, providers, and a segment of the public at large. Improving overall health outcomes requires a collaborative effort and innovative approaches that address education, delivery, and financing of oral health care. The purpose of this study was to investigate Massachusetts' key informants' knowledge and experience regarding development and implementation of medical/dental integration practices, including recognized barriers and possible solutions for integration enhancement.

METHODS This phenomenological, qualitative study used a criterion-based sampling method to choose key informants considered experts in medical/dental integration. An interview guide including demographic and exploratory questions was used to conduct in-depth interviews. Thematic analysis occurred via identification of patterns, and emergent themes.

RESULTS Data saturation occurred with eight (n=8) key informant interviews. The majority of participants argued the greatest barrier to integration is the needed cultural shift in health care practices. Informants believed an integration relationship must occur at the individual practice level to ease the process. Informants consistently reported that although integration is arduous, it can be accomplished using a structural approach.

DISCUSSION Much of the literature discusses established medical/dental integration programs. This study identified how key informants are currently developing or implementing medical/dental integration programs either in academia or through continuing education.

CONCLUSION The findings suggests that the implications for interprofessional practice are an expanding and important component to future healthcare.

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Implications for Interprofessional Practice

- Medical/dental integration has a potential for improving access to oral health care services, especially for certain underserved and special needs populations.
- Successful interprofessional practice will require curriculum reform that includes experiential, bi-directional learning for medical and dental students and other health professionals.
- Policy reform that addresses the delivery and reimbursement of services is necessary to remove barriers that impede the successful implementation of medical/dental integration in clinical practice.
- Barriers of medical/dental integration can be overcome through pre-planning and teamwork.

Introduction

Oral health is an important public health issue in the United States (US) and is becoming a priority for discussion among policy makers, health care educational institutions, health care workers, and a segment of the public at large. According to the US Surgeon General's Report in 2000, poor oral health is a "silent epidemic" (U.S. Department of Health and Human Services, 2000). Adults and children lose millions of hours away from school and/or work because of tooth pain, infection, and endure countless dental appointments for restorative treatment (DHHS, 2000; Chu, Sweis, Guay, & Manski, 2007; Institute of Medicine & National Research Council, 2011). In addition, the elderly population suffers needlessly from oral diseases that may exacerbate already complex medical conditions (IOM & NRC, 2011). Adding to the problem is the lack of dental insurance for the majority of older adult population. Not only does Medicare not cover basic oral health services for this at-risk population, but in many states, comprehensive dental coverage for adults is not covered through Medicaid either. This creates an enormous burden for the healthcare system as a whole (DHHS, 2000; Bush et al., 2010; Carmona, 2003). The current crisis has motivated health professionals to look into other ways of providing dental care access and preventive care to underserved populations through new delivery models such as medical/dental integration.

Presently there is limited research on medical/dental integration in the United States (Doherty & Garland, 2014; Haughney, Devienne, Machpherson, & Mason, 1998). Most of what has been reported on this subject has been descriptive and provides information on experiences with interprofessional education (IPE) and medical/dental integration pilot projects. Although this is important, qualitative research can provide first-hand knowledge from key informants who are actively involved in IPE and medical/dental integration practice.

The purpose of this qualitative study was to investigate key informants knowledge and experience regarding medical/dental integration development, recognized barriers, and possible solutions. Additionally, this study explored the beliefs of key informants regarding methods to enhance the integration relationship between medical and dental providers.

Literature Review

Medical/dental integration is a care delivery model in which medical and dental professionals collaborate to provide a holistic approach to patient-centered care (Beetstra, Derksen, & Kaufman, 2002; Haughney, et al., 1998; Monajem, 2006). This combination allows for a holistic health approach to oral and systemic health. The idea of medical/dental integration has been examined in the United States since the 1970's (Chu et al., 2007). Interest in oral health peaked with the Surgeon General's Oral Health Report (2000). Significant oral

health needs were identified at that time, especially for vulnerable populations such as those with Medicaid. During the 15 years since the report, these unmet needs continue to exist and funding for public programs like Medicaid are more constrained than ever (Beetstra, et al, 2002; Bush, Dickens, Henry, Durham, Sallee, Skelton, . . . Cecil, 2010; Carmona, 2003; Chu, M et al, 2007; IOM & NRC, 2011; Monajem, 2006; Okunseri, Szabo, Jackson, Pajewski, & Garcia, R I 2009; DHHS, 2000). The combination of rising costs and limited budgets has led to exploration into potential solutions for addressing this dilemma, medical/dental integration being one of them. The overall goal of medical/dental integration is what many experts refer to as the triple aim: improved health = improved care = reduced cost (Lieberman, 2013). In an effort to achieve the triple aim in oral health care delivery, several foundations such as DentaQuest Foundation, WK Kellogg Foundation, and MetLife Foundation have funded research exploring medical/dental integration and its potential ability to address the aims (DentaQuest, 2015; Doherty & Garland, 2014; Metlife Inc, 2011). Additionally, since 2013, CODA requires IPE as part of United States dental schools core curriculum (American Dental Association, 2013). The Liaison Committee on Medical Education (LCME) guidelines recommend medical school curriculum to comprise IPE in several disciplines including dental (LCME, 2016). Furthermore, in 2009, the Interprofessional Education Collaboration was formed (Grbic, Caufield, & Matthew, 2014).

Interprofessional Education

New York University (NYU), school of nursing was one of the first to identify short, mid, and long-term strategies for interprofessional relationships (Dolce, Haber, & Shelley, 2012). Dolce et al. (2012) reported an innovative oral health nursing education program conducted at NYU that entailed a specific program called “train-the-trainer”. These workshops taught nursing faculty, oral health education, which enabled them to teach their nursing students. According to Dolce et al. (2012), NYU developed the IPE program upon realizing the inadequate education among non-dental professionals in basic oral health knowledge.

Bouvé College in Boston provides an innovative and contemporary IPE in health sciences curricula (Dolce, Aghazadeh-Sanai, Mohammed, & Fulmer, 2014). Dolce et al. (2014) presented a position paper regarding the integration of oral health into interdisciplinary

health sciences curriculum. Bouvé College has the largest health care curriculum in the metropolitan Boston area (Dolce et al., 2014). The Oral Health: technology, instruction, practice, and service (TIPS) program is an innovative IPE program that links the IPE to clinical practice through technology, instruction, and experimental learning (Dolce et al., 2014). Health care students are prepared for interprofessional practice through campus-based learning and experimental education. According to Dolce et al. (2014) the goal was to enhance the integration of oral health care as an essential component of comprehensive primary health care. The authors suggested future IPE include an additional emphasis on oral health promotion and disease prevention (Dolce et al., 2014). Dolce et al. (2014) concluded that IPE is the trend of the future that will bring all healthcare disciplines to acknowledge, respect, and rely on one another for patient management.

Medical/Dental Integration Models

In 2014, the DentaQuest foundation issued a report highlighting and defining different types of collaboration (Doherty & Garland, 2014). The report sought an expert panel and through focus group discussions, provided definitions for different types of collaborative practices. According to Doherty and Garland (2014), co-location is defined as practices that are in a shared space that solely network with one another and educate their patients on the importance of overall health. Additionally, Doherty and Garland (2014) pointed out that the term *co-located* is a formal collaboration between a medical and dental practice, and *co-located partial integration* is when primary care offices provide oral health services. The types of oral health services that can be included are oral health education, caries risk assessment, fluoride treatment, and oral evaluations (Doherty & Garland, 2014).

Collaborative practice can occur in the same medical building with shared electronic records, but separate offices (Doherty & Garland, 2014). The collaborative practices have separate staff and isolated business practice models (Doherty & Garland, 2014).

However, patient care is integrated with shared electronic health records, which make it convenient for either medical or dental practices to view patient history and rendered care (Powell & Dinn, 2008). These integrated practices can see new medications, results from blood work, and other important medical and

dental information that is pertinent to each patient (Powell & Dinn, 2008). Collaboration is an integral way to incorporate medical and dental together and a way for healthcare providers to approach patient care from a holistic perspective (Powell & Dinn, 2008).

In 2004, Wisconsin implemented their own partial integration of oral health services in primary care settings for Medicaid enrolled children. Wisconsin revised Medicaid coverage in 2004, to include fluoride treatment reimbursement, provided in a medical setting (Okunseri, Szabo, Jackson, Pajewski, & Garcia, 2009). The purpose of the Okunseri et al. (2009) study was to investigate how the medical coverage for fluoride reimbursement impacted fluoride varnish utilization in children. Okunseri et al. (2009), conducted a retrospective secondary analysis pertaining to Wisconsin's Medicaid revision for the years before the implementation (2002-2003) and after implementation (2004-2006), analyzing fluoride varnish claims (Okunseri et al., 2009). Results from the Okunseri et al. (2009) study found that the largest reimbursement increase was among medical providers (83.5%), for children ages 1-2 years old (Okunseri et al., 2009). The pre-policy rate of fluoride varnish claims was 14% per year and post policy was 66% per year (Okunseri et al., 2009). Okunseri et al. (2009) concluded overall, 48.6% of the increase of fluoride varnish claims were attributable to medical providers.

Medical/Dental Integration Barriers

Today, most Americans adults are expected to retain their natural teeth over a lifetime as compared to a generation ago, which has created a greater demand for oral health care, but there is not enough access to meet the demand (DHHS, 2000). State fees through state funded insurance plans such as Medicaid, are significantly lower than private dental plans (DHHS, 2000). Often times many private practices do not accept Medicaid insurance, because of the low reimbursement fees and high rate of missed appointments among this population. Additionally, many private practices are not accepting state funded insurance, so the prominent burden falls on health centers with an abundance of patients, and not enough providers to meet the demand (DHHS, 2000).

Requirements for physicians have changed through the federal government reporting of meaningful use (IOM & NRC, 2011). The Early and Periodic Screening, Diagnostic, and Treatment (EPSDT) metrics that

are now required for children, include oral health. This requirement has added a reimbursement rate through medical insurance for children receiving oral health preventive services in medical offices, but there is still no reimbursement for adults and the older adult population. The reimbursement rates through Medicaid dental plans have not had any increase in many states, for over a decade.

Even with the new medical reimbursement of oral health screening and fluoride varnish, there are still several barriers on a practice level. Close, Rozier, Zeldin, and Gilbert (2010) conducted a study assessing the barriers to implementation and adoption of preventive dental services in medical offices. The study was conducted over the period of 12 months, through a sampling from the Into the Mouths of Babies (IMB) cohort study (Close, Rozier, Zeldin, & Gilbert, 2010). Through self-completed surveys, medical professionals, (N =231) reported their experience of providing oral health services to Medicaid enrolled children who were in the IMB program (Close et al., 2010). According to Close et al. (2010), the four most common barriers reported were difficulty integrating dental procedures into practice routine, resistance among staff and colleagues, applying fluoride varnish, and dental referrals. Additionally, Close et al. (2010) reported that medical providers indicated the most easily overcome barrier was the lack of knowledge (OR= .33), and the most challenging barrier was the difficulty of integrating dental practice into daily routines (42%) in a 12 month timeframe. Results indicated 61% of the providers reported being able to overcome all barriers. Additionally, three out of every four offices included in the study continued the integration practice. Overall, the program adoption rate was 70% of medical professionals providing dental services on a routine basis (Close et al., 2010). Participants reported that hard work, diligence, staff meetings, and negotiations led to barriers being overcome. Close et al. (2010) concluded that over the entire study, all barriers were overcome.

Purpose

The aim of this study was two-fold, first to investigate Massachusetts' key informants' knowledge and experience regarding development and implementation of medical/dental integration practices, and recognized barriers. Secondly, this study sought to explore key informants' views regarding methods to enhance the integration relationship between medical and dental providers.

Methods

A qualitative study design was employed for the purpose of this study investigation. Using a semi-structured interview guide, containing a series of exploratory questions allowed the researcher to probe the participants and expand upon questions as needed (Pitney & Parker, 2009). This study used a criterion-based sampling method to choose key informants that were considered experts in medical/dental integration. Five initial key informants were pre-selected with assistance from a state-wide oral health coalition. From the pre-selected key informants, snowball sampling was used to identify other key informants. Participants were recruited via email or via phone. This research was approved and overseen by the University's Institutional Review Board.

The interview guide consisted of five (5) demographic questions and nine (9) exploratory questions. The nine exploratory questions were designed to collect qualitative information from the experts in regards to their beliefs on medical/dental integration programs and practices. Open-ended questions were purposely used to enrich the conversation allowing freedom of the experts to dive deep into thought provoking conversation and responses.

Based on participant preference, all of the study interviews were conducted via phone. A consent form and a copy of the interview questions were sent via email. Questions were sent ahead of the interview to allow study participants more time to process the questions and gather their thoughts and responses.

To ensure credibility and reliability, a digital voice recorder and field notes were used in all interviews. Transcripts were compared to field notes for accuracy. Additionally, to increase validity, member checking was employed, allowing all participants to review their transcribed interview for accuracy. Three of the eight participants chose to modify their interview transcription.

Demographic quantitative data was analyzed using SPSS statistical software, based on the use of descriptive statistics, including frequency percentiles and means. Demographic data was tested for normality, where appropriate. Thematic analysis uncovered patterns and themes in participant responses. Codes were created to accurately identify the major

themes within the interviews. Codes were uncovered and from those codes, themes emerged for each of the research questions.

Qualitative results can be explained using various voice emphasis approaches (Pitney & Parker, 2009). Voice emphasis of emergent themes is an important consideration in delivering meaningful and accurate findings (Pitney & Parker, 2009). For the purpose of this study, high presentation of researcher's voice and low presentation of participants' voice were used in presentation of results (Pitney & Parker, 2009).

Results

Demographic Questions

Data saturation occurred with eight (n=8) key informant interviews. Professional career for participants ranged from 18 months to 35 years with a mean of 22.06 years. Sixty-two percent of participants received no formal medical/dental integration training or education. Demographic results can be found in Table 1 (see page 6).

Through thematic analysis, there were parallels found between the two research questions. Results were separated by each research question. Participants were assigned numbers to preserve confidentiality.

Themes

Research Question 1

What are the knowledge and experiences of Massachusetts' key informants regarding medical/dental integration development, recognized barriers, and possible solutions?

Theme 1: Interprofessional Education. Participants explained that without medical providers having oral health knowledge, it is difficult to convince them to integrate oral health into their current practice. Participant 7 stated, "Getting medical providers to understand why oral health is important in their practices," shows that with the lack of understanding the importance of oral health and the connection to overall health, it can be difficult to convince other healthcare professionals the value of medical/dental integration.

In Massachusetts, IPE programs are currently grant funded through several projects, which is pushing the collaboration forward in a positive way. Several

Highest Level of Education, n (%)	
Associates Degree (A.S.)	1 (12.5 %)
Master of Social Work (M.S.W.)	1 (12.5 %)
Master of Science (M.S.)	2 (25.0 %)
Doctor of Philosophy (Ph.D.)	1 (12.5 %)
Medical or Dental Doctorate (M.D. / D.M.D.)	3 (37.5 %)
Current Profession, n (%)	
Oral Health Affairs Manager	1 (12.5 %)
Health care consultant	1 (12.5 %)
Practicing Physician	2 (25.0 %)
Nursing Professional	1 (12.5 %)
Dental Hygienist	2 (25.0 %)
Dental School Dean	1 (12.5 %)
Length of Professional Career, mean years (SD)	22.06 (10.52)
Previously Received Formal Medical/Dental Integration, n (%)	
yes	3 (37.5 %)
no	5 (62.5 %)

Table 1. Participant Demographics (n=8)

universities in Massachusetts are working together with their nursing, physical therapy, and dental students to combine classroom and clinic hours together to learn from one another.

Several of the participants were directly involved in IPE, where medical and dental students are working collaboratively. One participant shared that undergraduate students are required to have an experience or exposure, usually in their senior year. Through these experiences students are encouraged to work alongside different specialties including dental providers. Participant 4 stated, “We have implemented a cooperative education model to help a homeless program in Boston. [This program] fully integrates medical/dental ... and creates an opportunity for medical and dental [students] to work together when treating patients.” This type of learning environment creates an opportunity for a variety of future providers, to ask each other questions, network with one another, and provide a team approach to patient care. Participant 6 explained that developing new general practice programs, comprising both dental and medical aspects, is the “practice of the future that includes general medicine, oral health, OBGYN, and behavioral health.” Additionally, participant 6 discussed a program that was being developed that uses the term, “oral health physicians for the dental residents.” This is a “... general practice residency where general medicine

and dental are integrated with internal medicine, in which medical and dental providers share patients and have joint rounds.” At this stage, a dentist still graduates with a DMD but oral health physicians may be common terminology used in the future of practicing dentists as IPE moves forward and is more commonly practiced in a learning environment.

IPE is a collaborative effort to enhance relationships between medical providers and dental providers before they graduate and practice on their own. Building these relationships in a learning environment cultivates understanding, team building, and a shift in culture before students are in an established practice.

Theme 2: Healthcare Reform. Many participants discussed the need for policy change and healthcare reform to reduce medical/dental integration barriers and to make implementation more feasible to private practice. Policies related to medical and dental integration reimbursement for healthcare providers would allow each of the specialties to be reimbursed for the diagnoses and procedures that are typically not in their usual scope of practice. Medicaid had been covering preventive oral health services received in medical offices, for quite some time. As of May 1st, 2015, private medical insurance followed and included preventive oral health services for children up to age 19. Medical providers are required by the federal gov-

ernment to report on meaningful use through EPSDT, which historically were basically immunizations, vision, etc. Oral health has since been added as a metric that is required to be in line with the *HealthyPeople 2020* target goals (CDC, 2014).

General dentists are only reimbursed for procedures, such as fillings, crowns, prophylaxis, etc. These are deemed procedure codes to comply with insurance companies. Dental providers are not reimbursed for oral health education, taking blood pressure, and other health assessments deemed as medical procedures, because these are considered as diagnostic codes. Medical providers are reimbursed for diagnosis codes such as taking blood pressure, discussing depression, and diagnosing the flu. Participant 6 discussed a concept bill that was previously mentioned, in regards to changing the title from “dentist” to “oral health physicians”. Participant 6 stated, “The bill was met with great controversy [from the dental community], because in dentistry reimbursement is based upon procedure and not on diagnoses. The term *oral health physician* implies dentists may, someday practice at the top of their degree, which makes [an argument for the use of] midlevel providers such as a dental therapists or an advanced dental hygiene practitioner, much like nurse practitioners.” According to Participant 6, an alternative approach after the legislative bill was denied was to change the dental curriculum to enable dentists to get licensed as both a medical doctor (MD) and doctor of dental medicine (DMD), so they are able to bill for both procedures and diagnoses. However, this approach is still being researched.

Reimbursement is continually a barrier that is reported in much of the literature (DHHS, 2000). Although reimbursement has improved for children receiving fluoride varnish at a medical office, reimbursement for other oral health services is not provided. Healthcare providers would benefit from being reimbursed for oral health education, and referrals. Many participants believe that one of the barriers to integration is having the time to add oral health to an already busy appointment. If reimbursement was provided for all of the oral health preventive services given to patients, it would compensate healthcare providers for the extra time they have to put in to providing these services. Policy changes are a large part of medical/dental integration being a financially sustainable and obtainable practice.

Research Question 2

What are the Massachusetts key informants’ beliefs regarding methods to enhance the integration relationship between medical and dental providers?

Theme 1: Paradigm Shift. Participants identified and agreed that in order for medical/dental integration to be operational and sustainable, a fundamental change in culture, thinking, and practice will be required. Regarding this shift, participant 8 stated, “There is a misconception that because medical and dental are collocated, there must be better access to dental care, and this is not the case.” The development of a program needs more than just collocation. Participant 8 added that developing a sustainable integration program must include “Getting down to the practice level, which means going into the practice, meeting with staff, looking at their current systems, who their population of patients are, and the practice’s workflow.” Participant 8 expanded on this notion by further explaining the differences between medical and dental offices. Medical and dental providers run their offices very differently. According to informants, medical providers usually see upward of 30 patients a day per provider. They also only schedule appointments in short lengths, around 15 minutes per patient. Their practice is mainly diagnostic and refer out to specialists or labs, or provide prescriptions to be filled at a pharmacy. Medical providers also typically have several rooms to provide for multiple patients at a time. Informants added that dental providers typically schedule by procedures. Most procedures require an extensive amount of time, more than 15 minutes to provide a service. Adding that dental offices only typically have a few operatories, if that. These practicing differences do not necessarily make it easier for collocation to integrate medical and dental.

The majority of informants believed that despite the barriers to collocation, with proper planning and a team of individuals to help collocate in an organized, systematic way, collocation is possible and can be successful. Participant 8 added:

in order to develop a sustainable integration, the developer needs to get to the practice level and find out who their patient population is, what their workflow is like, and who in the office will be the team leader for the integration to be successful.

Participants also recommended that practices wanting to develop a medical/dental integration program have

a “champion.” Participant 2 stated, “Every practice needs to have a champion, someone who is excited and enthusiastic about integration.” This champion concept was recognized as an active member of the development team who is enthusiastic and keeps the integration process moving forward, whether by “bringing new ideas to the table,” or helping with workflows.

Participants strongly emphasized the importance of technological health systems needing to communicate with each other in order to have a patient-centered approach to care. Participants pointed out that the EMR (electronic medical record) and EDR (electronic dental record) need to be integrated and bidirectional. In one integration program, participant 1 revealed that they were able to modify the existing EMR by adding a prompt with oral health questions for the health-care team. Participant 6 added that their students are working on developing an EMR that is bidirectional for medical and dental providers. Because of the way medical and dental providers are reimbursed, it was noted that a bidirectional EMR can be difficult to achieve, as most dentists are reimbursed for procedures where medical providers are reimbursed for diagnoses. Therefore, an electronic health record would require extensive technological modifications of current reimbursement systems. Informants emphasized that integration ability is necessary at the practice level and will determine the sustainability of a medical/dental integration program.

Theme 2: Improved Education. The second emergent theme regarding the key to enhancing relationships to increase medical/dental integration was, overwhelmingly, the call for improved education. Improvement included providing IPE experiences for both undergraduate and graduate level medical and dental students and providing current practicing medical and dental providers who have not received education the tools to incorporate overall health and oral health into their practice routine.

IPE may include an understanding of the importance of oral health, the identification of oral health problems, and the incorporation of simple preventive services and dental referrals. According to participant 8, one of the best ways to accomplish this is through “peer-to-peer training.” Online forums were also suggested, such as Smiles for Life training, a dental curriculum for non-dental health providers. In order to improve education, Participant 6 recommended,

“[health care faculty] ... build trust and confidence in [students] abilities.” Participant 5 added that in order to build the confidence, there is a great need “to teach nurses and other healthcare professionals how and where to put their hands in people’s mouths.” Participant 3 recommended, “[in the private sector] we need to cultivate open, trusting relationships that lead to partnerships, and ... [willingness] to share leadership and open to learning from our failures and sharing those practices.” Additionally, informants pointed out that integration means equal effort from all healthcare professionals. Participant 1 added:

we need participation from not only the medical side, but ... dental [providers] need to get on board [too], and realize they play an intricate role in networking and providing dental homes for medical patients, and [recognize that] they are a major piece of medical/dental integration.

Regarding education, informants recommended interprofessional educational websites with toolkits; which offer peers who are already integrated, acting as mentors that can provide one-on-one training to encourage health care providers to begin a medical/dental integration program within their current establishment.

In the academic setting, informants offered the following suggestion: allow medical students the opportunity to work in collaborative relationships, sharing classrooms, sharing rounds, and sharing patients. Informants believed these practices can lead to a greater understanding of oral health and how it affects overall health. At the same time, dental professionals gain an understanding of more complex medical issues and how oral health can have a profound effect on health outcomes. Improving interprofessional education in academia allows upcoming healthcare providers to gain integration knowledge and may increase future integration.

In order to reach currently practicing healthcare providers, informants recommended peer-to-peer training as the most beneficial choice. According to the medical informants, when medical providers witness their peers in the same profession integrating dental into their medical practices, it validates and ensures that they can do the same. Peer guidance was acknowledged as a significant influence with medical/dental integration. Informants offered that providing medical and dental providers with a how-to integra-

tion plan, as well as, establishment of a team that could provide feedback, help with workflow, solutions, and encouragement to individual practice issues, could encourage healthcare professionals to integrate their practice.

Discussion

This qualitative study aimed to investigate key informants knowledge and experience regarding medical/dental integration development, recognized barriers, possible solutions, and methods to enhance the integration relationship between medical and dental providers. Much of the literature has discussed established medical/dental integration programs (Beetstra, S., Derksen, & Kaufman, 2002; Doherty, & Garland, 2014; Haughney, et al., 1998; Monajem, 2006; Okunseri, et al., 2009). This qualitative study revealed how key informants are currently practicing or developing medical/dental integration programs, either in academia or through continuing education programs that are building sustainable programs for medical/dental integration. Although there has been research conducted on medical/dental integration, the literature has mainly focused on singular pilot projects (Beetstra, Derksen, & Kaufman, 2002; Doherty, & Garland, 2014; Haughney, et al., 1998; Monajem, 2006; Okunseri, et al., 2009). This study highlighted experiences and knowledge gained from experts regarding the spectrum of medical/dental integration.

IPE is an important aspect of overcoming many barriers associated and found in the literature for medical/dental integration (Dolce et al., 2012; Dolce et al., 2014). According to the Dolce et al. studies, providing students with an exposure to integration from the beginning leads to better understanding of integration practice and ease to networking (Dolce et al., 2012; Dolce et al., 2014). Informants from this study also agree with the Dolce et al. claim, adding that starting early makes integration practice much smoother when students are no longer in an educational setting. IPE provides the knowledge necessary to overcome integration barriers.

Some of the literature pertaining to medical/dental integration pilot projects highlighted collocation of medical and dental practices. This study expounded on these terms, with the sharing of collocated practice experiences. Doherty and Garland (2014) emphasized that collocation makes it convenient for patients, especially those where transportation is an issue, but this

study highlighted that collocation does not necessarily make it easier to integrate medical/dental practice.

Additionally, this study found that although research regarding Medicaid reimbursement has been positive, medical/dental integration has not been implemented long enough to demonstrate solid evidence. This study also found that medical/dental integration is obtainable and is a significant step to patient-centered care. This study added to the current body of medical/dental integration knowledge by providing expert information on the necessary steps in developing and implementing a medical/dental integration program and practice.

The medical/dental integration projects have been mainly centered on children (Close, et al., 2010; Chu, et al., 2007; Monajem, 2006; Okunseri, et al., 2009; Powell, & Dinn, 2008). Although children are an important population with a great need for early intervention, adults and elderly are also an important population that could benefit from medical/dental integration. Often, when government budgets are being evaluated for fiscal improvement, Medicaid oral health benefits are reduced or cut for adults, including the older Medicare population. Future research must address how medical/dental integration can be expanded to provide oral health preventive services to these populations.

The triple aim was an exploratory question asked to key informants. Although many of the key informants in this study did know about the triple aim concept, many of them suggested that medical/dental integration has not been practiced long enough for sufficient evidence or knowledge regarding its sustainability. In regards to the triple aim strategy, the reduction in healthcare costs has not been proven, and there is ongoing research on defining each goal of the triple aim (Tinanoff, 2012). The triple aim is also a complex and multi-layered subject matter that cannot be solved by one solution, rather by bringing several pieces together. At this time, research on pay for performance models are currently being tried in medical but are slow to be adapted in dental (Tinanoff, 2012). With the complexity of payer methods and slow adaption of evidence-based medical and dental practice to pay providers on improved health outcomes, reaching the triple aim may be many years away (Tinanoff, 2012).

Limitations of this qualitative study include: bias and subjectivity that can occur through semi-structured,

open-ended interview questions; key informants' bias; and inability to infer study findings, as participants' experiences may only be relevant to medical/dental integration in Massachusetts and not generalizable to the rest of the United States. Another limitation is the number of medical informants interviewed compared to dental providers. This study was done from the medical stand-point pertaining to medical/dental integration as opposed to dental/medical integration. Although some dental facilities are conducting medical assessments such to measure metrics, the majority are not. Dentistry has always been viewed as a "cottage industry," and therefore it is difficult to implement change. More research and funding should be applied to dental practices implementing medical preventive services as part of their routine care.

Conclusion

This qualitative study addressed important gaps in the literature regarding the call for healthcare policy reform, importance of networking, peer-to-peer mentoring, interprofessional academic education value, and improved continuing education for practicing medical and dental professionals. Although medical/dental integration is still a somewhat new concept, this study has reinforced previous research and has added expert testimonies on what is working in practice. Although these findings are specific to the Commonwealth of Massachusetts, the knowledge gained from this study could be inferred to other states with similar population demographics, healthcare practices, and laws. The sharing of medical/dental integration ideas will continue to expand healthcare collaboration knowledge and can potentially lead to increased provider participation. Through education, policy reform, and integration ability, medical/dental integration can be sustainable and is an important consideration for the future of healthcare.

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