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Dentists and Pharmacists: Paradigm Shifts and Interprofessional Collaborative Practice Models

Cynthia Valle-Oseguera, PharmD, and Eric G. Boyce, PharmD

ABSTRACT Collaborations between dentists and pharmacists have the potential to improve patient care; however, there are limited examples in practice of interprofessional models between these disciplines. The purpose of this article is to explore the current relationship between dentists and pharmacists and to propose new models of interprofessional collaboration that target improvements in patient care.

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Conflict of Interest
Disclosure: None reported.

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Health care continues to evolve and move toward improvements in quality of patient-centered care through interprofessional collaboration among different disciplines. The Institute of Medicine (IOM) has designated interprofessional collaboration as one of the five core competencies that every health care professional should meet during the provision of care and irrespective of their discipline.¹ Collaborations between dentists and pharmacists have the potential to improve patient care, but there are limited examples in practice of interprofessional models between these disciplines. This may be related to perceptions that disconnect oral health from overall health, often regarding the former as a luxury and failing to appreciate its impact on overall well-being.² The

current relationship between these professionals appears to be limited to phone calls regarding ordering of prescriptions, prescription clarification and therapy modification due to insurance coverage or when medically necessary. However, there are many other areas, including prevention and treatment of infection and pain management, in which patient care can be enhanced through interprofessional collaborations between dentists and pharmacists.

Both disciplines are faced with unique challenges that have potential for improvement if both professions work collaboratively. In order to achieve meaningful collaborations, team participants should desire to work in partnerships, possess shared respect and trust and have an understanding of each other's roles.^{3,4} An important obstacle for both professions is their limited physical interaction with other professionals.

TABLE

The General Responsibilities of Dentists and Pharmacists According to the American Dental Association and the American Association of Colleges of Pharmacy^{10, 11}

Dentists' Responsibilities ¹⁰	Pharmacists' Responsibilities ¹¹	Pharmacists' Goals ¹¹
Diagnosing oral diseases.	Dispensing medications.	Cure disease.
Promoting oral health and disease prevention.	Monitoring patients' health and progress to maximize their response to the medication.	Eliminate or reduce symptoms.
Creating treatment plans to maintain or restore oral health.	Educating patients on the use of prescriptions and over-the-counter medications.	Arrest or slow a disease process.
Interpreting X-rays and diagnostic tests.	Advising physicians, nurses and other health professionals on drug decisions.	Prevent disease.
Ensuring the safe administration of anesthetics. Monitoring growth and development of teeth and jaws.		Recognize disease.
Performing surgical procedures on the teeth, bone and soft tissues of the oral cavity.		Alter physiological processes for desirable result in the patient's health.

Historically, dentistry's former "silo" training approach has resulted in isolated practitioners rather than fully integrated players in the interdisciplinary health care team.⁵ Similarly, community pharmacists who practice in independent or chain pharmacies tend to be physically isolated from other professionals, limiting interprofessional interaction to fax, phone calls or other electronic means of communication.⁶

Interestingly, dentistry and pharmacy share a common patient care approach, as they both focus on the physical body and are guided by evidence-based interventions.⁴ Discussions centered on patient cases between dentists and pharmacists provide an excellent opportunity for collaboration. A crucial distinction between these two disciplines lies in patients' accessibility to their services. While dentists are usually only available by appointment, the opposite is true of pharmacists. This is particularly significant for those patients who lack access to oral health providers and thus seek community pharmacists for concerns pertaining to oral health.^{7,8} Pharmacists may also assist in oral health preventive services such as oral cancer prevention

by providing counseling on tobacco cessation and offering therapeutic recommendations to aid in quitting.⁹

There is a great potential for improvement in patient-centered care with the development of new, closer and stronger interprofessional collaborations among the various health care professionals. The purpose of this article is to explore the current relationship between dentists and pharmacists and to propose new models of interprofessional collaboration that target improvements in patient care.

Dentist and Pharmacist: Complementary Roles and Responsibilities

The general responsibilities in the clinical practice of dentists and pharmacists may differ somewhat (TABLE),^{10,11} but provide many opportunities for collaboration to improve patient care and enhance efficiencies in providing care. The major responsibilities of dentists focus on the health of the oral cavity and the major responsibilities of pharmacists focus on the use of medications for overall health. However, both professions have responsibilities for the overall improvement of a patient's health, diagnosis or recognition of disease and disorders, promotion of health, prevention of disease, treatment and moni-

toring of diseases and disorders and the safe use of medications (TABLE).^{10,11}

Dentists and pharmacists also share responsibilities or have complementary responsibilities related to patient care within the specific components of the care they each provide. These shared and complementary responsibilities provide excellent areas for potential collaboration. They could result in improved and more efficient patient care with respect to medical and medication histories, pain management, prevention and management of infections and the management and referral of patients.

A patient's medical and medication history, including allergies and vaccinations, is very important to both the dentist and the pharmacist in the assessment of the patient. This information assures recognition of problems that may need to be treated and the appropriateness of therapies that may be needed or avoided. The dentist's patient chart and the pharmacist's patient-medication profile will likely complement each other, but are generally not a complete medical record based on the limitations within those records and the number of physicians, dentists and pharmacists that patients may see

for their care. Dentists and pharmacists are likely at a similar disadvantage, depending upon their practice site and affiliation, in having little or no access to a patient's full medical records and clinical laboratory studies and other tests and could therefore benefit through the sharing of clinical information that each has on a specific patient. Patients would need to be well-informed and would probably need to provide HIPAA consent for sharing of that information. Whether or not information from records is shared, the dentist and the pharmacist can also consult each other on the use of medications in patients with allergies, contraindications or other conditions that may be associated with adverse effects, drug interactions or other problems.

A clinical problem commonly addressed by both dentists and pharmacists is the management of pain due to oral conditions or procedures. The treatment of pain is complicated by the need to provide relief for mild to severe pain, but also being able to recognize and avoid the potential for drug abuse, addiction and diversion. The medical and medication history, as noted above, may be very useful in determining if a patient is at risk for addiction or abuse but may also be limited if a patient goes to a number of pharmacies for different prescriptions. The duration of pain before and following a dental procedure is usually short term, but a small number of patients in a dental practice may require chronic therapy for their dental condition. Management of chronic pain is much more complex than the management of acute pain, requiring long-term follow-up for efficacy, abuse, addiction and adverse effects. Additionally, a state bill was recently passed and guidelines are under development in California to allow a pharmacist to furnish naloxone for the prevention and treatment of opioid overdose.¹² A dentist-pharmacist collaboration in

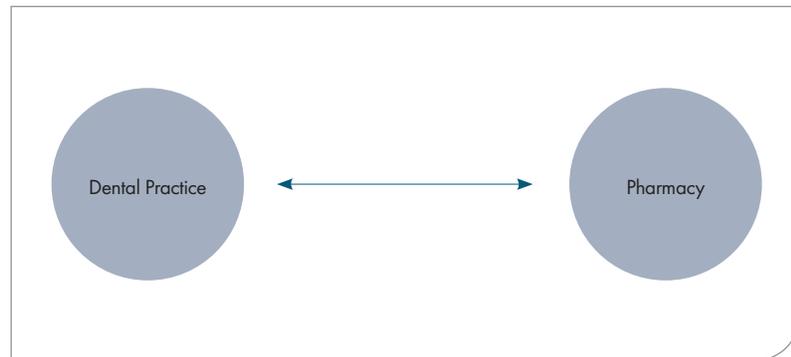


FIGURE 1. First model of interprofessional collaboration: Dentist and pharmacist collaborate in close proximity.

the management of chronic pain could be very useful in pain management, the selection and use of analgesics and referral for naloxone if needed.

The prevention and treatment of infection is also a common and complex clinical problem for dentists and pharmacists. The medical and medication history can be used to identify a patient who may be at high risk for infection, at high risk for endocarditis and therefore needs antibiotic prophylaxis for a dental procedure, has an allergy that may affect antibiotic selection and/or has the need for one or more vaccinations. The development of resistance is always a concern when considering which antibiotic to use. A collaborative arrangement between dentists and pharmacists could address many of these issues. Sharing information on medical and medication histories is noted above. Dentists and pharmacists could pool their resources and develop a shared understanding of up-to-date treatment guidelines for endocarditis prevention, the treatment and prevention of other infections and vaccinations. Current resistance patterns that have developed locally, regionally or nationally and are reported by health care agencies and hospitals could also be shared. Additionally, dentists could refer patients and staff to the pharmacist for evaluation and administration of vaccinations.¹² Patients could also be referred to the pharmacist for the purchase of any facemasks, gloves and

other products that may be needed in the prevention or management of infections.

Collaboration arrangements could also involve referral and consultation between dentists and pharmacists for other problems. Patients may seek a pharmacist for concerns related to tooth pain,^{7,13} therefore, a pharmacist could refer a patient with an oral problem to a specific dentist (his or her collaborative partner) for evaluation and possible care. Dentists may refer patients to a pharmacist for vaccinations, facemasks and gloves, as mentioned above, in addition to oral care products and smoking cessation products. Once additional regulations and guidelines are in place, dentists may also refer patients to pharmacists for naloxone, travel medicine, self-administered hormonal contraception and the ordering of routine laboratory studies to monitor diseases.¹² A consultation may be appropriate for managing patients with difficult situations, such as those patients on anticoagulants or antithrombotic agents or with a bleeding disorder who must undergo a dental procedure. Emergent medical situations may occur in the dentist's office or in the pharmacy and may be more readily resolved if resources and expertise are combined. For example, dentists' offices commonly have oxygen available for emergency use. Additionally, the dentist and pharmacist may consult with each other to discuss the appropriateness of referring a patient to a physician, emergency department or hospital.

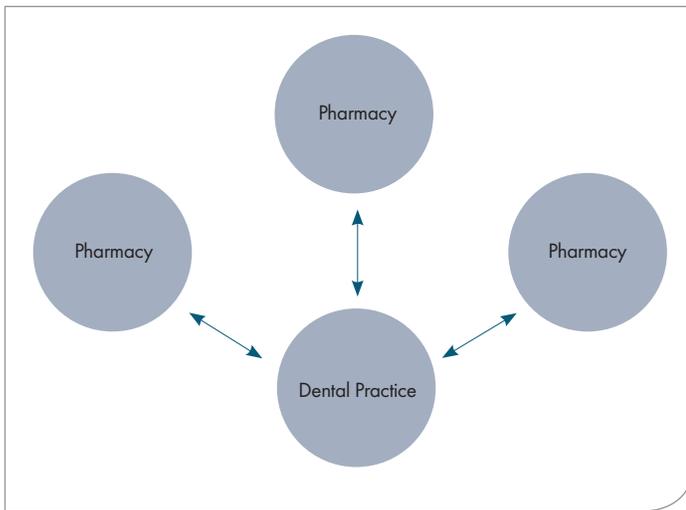


FIGURE 2. Second model of interprofessional collaboration: Dental clinic in collaborative agreements with multiple pharmacies.

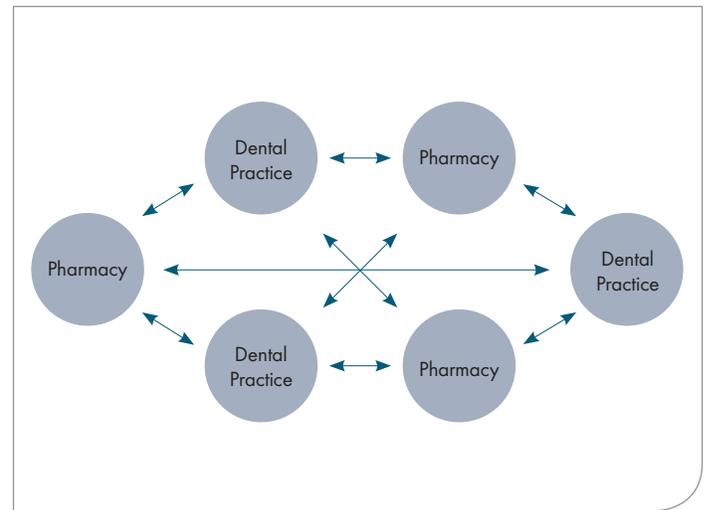


FIGURE 3. Third model of interprofessional collaboration: Network of preferred pharmacies and dental clinics.

Interprofessional Practice Models

The following collaborative interprofessional models have been developed with the goal of utilizing the above overlapping and complementary roles and responsibilities of dentists and pharmacists to enhance patient care. The major considerations used in developing these models include the physical proximity of the dental practice and the pharmacy, as well as the nature of the populations of patients each serves.

A strong interprofessional collaboration between a dental practice and a pharmacy could be developed if the two are in close proximity and provide care to a reasonable number of the same patients (**FIGURE 1**). This could result in an ongoing, highly interactive collaborative practice model referring patients back and forth and providing for consultation among the dentists and pharmacists in each practice. Each professional could be available “on call” to assist in the care of patients from the other partner.

A second model would involve a single dental practice that develops interprofessional collaborative arrangements with a number of local pharmacies (**FIGURE 2**). This would be particularly useful in areas where there are few shared patients between the dental practice and any specific

pharmacy. The network of pharmacies would become those that the dentist would preferentially refer patients to and would call for consultation. Those pharmacies, in return, would preferentially refer patients to that dental practice or other dental practices in which they had similar relationships.

A third model, the “in-network” model, would include a network of both dental practices and pharmacies, which would function very similarly to the second model (**FIGURE 3**). The network of pharmacies would become those that the dental practices preferentially refer patients to and would call for consultation. Those pharmacies in return would preferentially refer patients to those dental practices. The dentist network and pharmacy network should place into effect a triage protocol by which to identify cases that require a dentist’s expertise and classify the urgency of the situation. Then, the partnered pharmacists will be able to correctly identify and refer the appropriate cases to the dentist provider. Likewise, dental offices may rely on their partnered pharmacist network to refer patients who would benefit from comprehensive medication therapy management and therapy counseling. Furthermore, therapeutic recommendations could be made to the referring dentist when questions regarding therapy arise secondary

to drug-drug interactions, drug-disease interactions or medication allergies.

There are a number of factors to consider in developing these interprofessional collaborative practice models. The first major consideration will be the development of the agreements or documents that describe the roles and responsibilities of each partner. In the beginning, these agreements should be informal and nonbinding, but should provide specifics on potential interactions and collaborations. These agreements may then evolve into more formal and binding arrangements if deemed appropriate by all partners. This evolution may also include the development of protocols for patient care and/or referral. It would also be very important to monitor the progress of these arrangements, resolve any issues and make improvements where needed. Holding periodic meetings among the partners would be very beneficial in monitoring and enhancing the strength of the collaboration. Input from patients could also be sought on the benefits and any shortcomings of the interprofessional collaboration. Given that patient care is the primary concern of each professional, it is also important to recognize that patients may want to receive care from one partner, but not from the other partner of any dentist-pharmacist interprofessional

collaborative practice. Finally, these models could also serve as examples of interprofessional collaborative best-practice sites for the dental and pharmacy education and postgraduate training.

A fundamental challenge of these interprofessional collaborative practice models resides in the monetary costs for their development and identifying the specific groups that will be covering the costs. While an ideal model would be one that places dentists and pharmacists within the same physical location, this is not a model that is feasible for the majority of professionals. It is challenging to justify the added costs in salary that having a pharmacist in a general dentistry practice would accrue. However, formulating practice agreements between a dental office and a pharmacy or pharmacists' network would be a doable approach to begin active interprofessional collaboration among these professionals. Another challenge is that the creation of protocols and development of partnerships take time and it is important to remain invested in the process.

Conclusion

As we seek to eradicate gaps in medical care, it is imperative that collaborations be fostered and developed among all health care professionals. With the implementation of a seamless process that facilitates the treatment of oral conditions by dentists and pharmacists in a patient-centered approach, it would be expected to see an increase in patient safety, patient satisfaction and overall patient well-being. This collaboration would provide a more comprehensive care approach to patients, where both professions are able to draw from each other's expertise to provide optimal patient care. However, future studies need to be conducted on the implementation of the proposed models in order to determine the existence and the extent of these benefits. ■

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