# The delegation of local anesthesia administration

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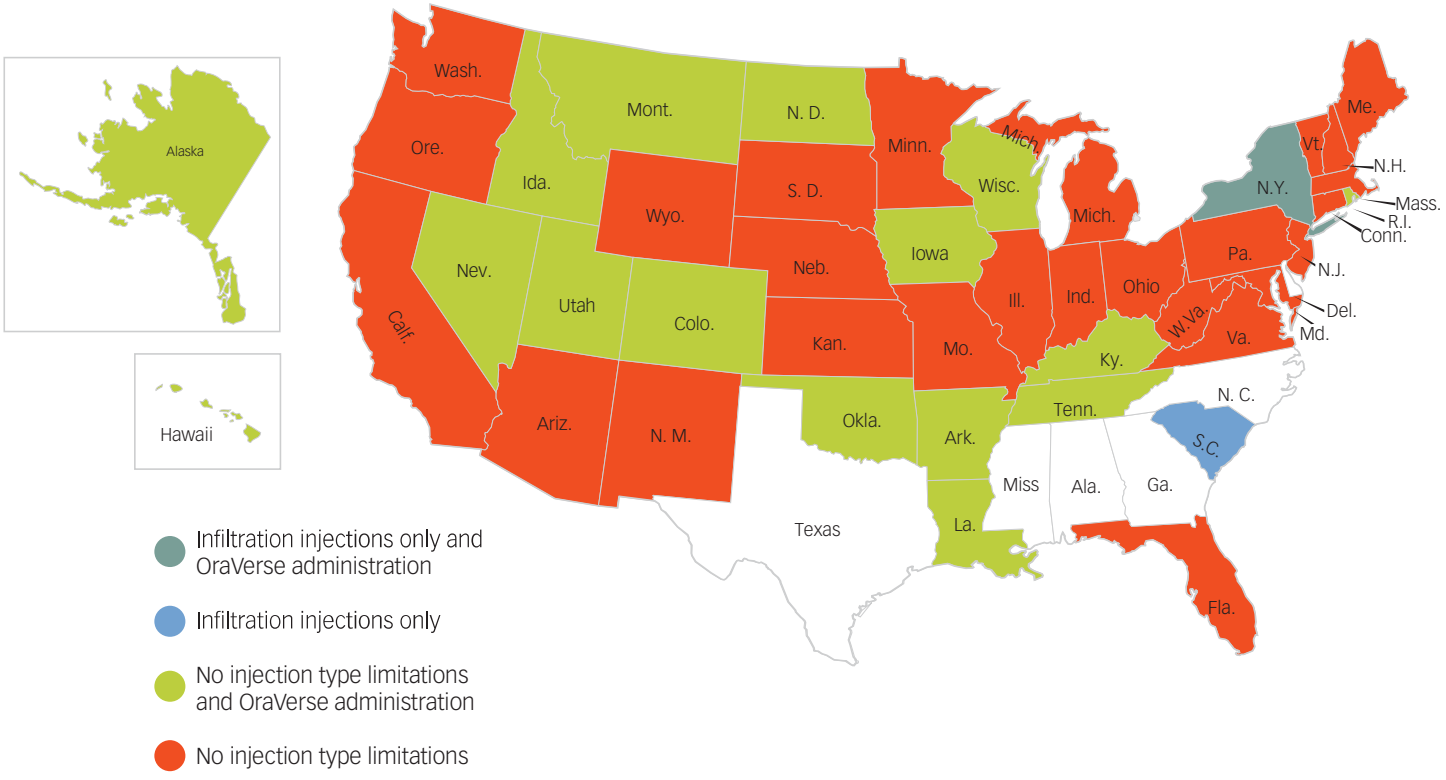
**AS THE CURRENT HEALTH-CARE SYSTEM** undergoes a paradigm shift, provider roles and responsibilities continue to change. Dentistry is not immune to these changes and continues to see practice act, financial, and educational modifications, which redefine the dental care team.[1-2]

In an era of streamlined workflow, cost-effective care, and changing consumer habits, the delegation of procedural tasks to nondentist providers is regaining momentum as a valid dental business model.[2-3] One procedure that was first delegated more than 40 years ago, local anesthesia administration (LAA) by dental hygiene providers (DHPs), has developed a record of safety and efficacy. Nevertheless, the profession still does not see universal use, nor is there a national consensus on administration and training.[3] This article will explore the clinical and commercial aspects of the delegation of local anesthesia administration.

## PRACTICE CHARACTERISTICS

Forty-four states and the District of Columbia include LAA by DHPs within their dental practice acts. Washington was the first state to pass legislation in 1971, and Florida was the most recent in 2012. In all of these states, the scope of practice includes administration of both topical and injectable anesthetic; however, New York and South Carolina limit injection type to infiltration only. The administration of the local anesthesia reversal agent OraVerse (Septodont) is considered part of the DHP scope of practice in 17 states ( figure 1). Various state regulations feature a level of ambiguity with OraVerse administration by not specifically stating reversal of effect as a scope of LAA. Prior to delegating the reversal procedure, it is advisable to review the practice act or query state leadership.

**Figure 1:** Scope of dental hygiene and local anesthesia practice in the United States



A national survey revealed that the majority of responding DHPs administered local anesthesia within their practices (59.5% of 432 respondents).[3] However, surveys completed by dentists report lower rates of delegation in some states.[4] A recent study demonstrated that practice activity can impact the frequency and technique of LAA (table 1).[3] DHPs practicing within periodontal specialty or public health practices report more frequent use of local anesthetics. Additionally, DHPs were found to administer with a higher frequency in states where LAA by DHPs has been within the scope of practice for a longer period of time.[3,5] Unfortunately, training requirements, supervision, and licensing can significantly differ from one state to the next.[5] This impairs data collection for analysis, makes portability of skills extremely difficult, and decreases the potential for profession-wide consensus and utilization.

## SUCCESS AND SAFETY

The dental profession has established a remarkable record of safety with LAA, especially given that an estimated 300 million intraoral injections are provided each year.[6] Considering that DHPs have provided a significant percentage of those injections, both dentists and DHPs have contributed to these safety numbers. In addition, specific safety analyses of LAA by DHPs demonstrate: No formal complaints were made to governing bodies within 1990 and 2005 reports;[7-8] DHPs did not produce a statistically significant difference in complication rate, compared to dentists, in a prospective study;[9] and an interpractice evaluation of DHPs reported low complication incidence.[10]

Efficacy data has established that the dental hygiene education process can produce providers who administer local anesthetic with high levels of success. In fact, recent reports reveal the following: Success rates with LAA by DHPs are similar to rates seen throughout the dental profession;[5,8,11] a significant majority of dentist-employers report satisfaction with DHPs' delivery of local anesthesia;[12] and no statistical difference was observed with readministration of local anesthetic between dental hygiene and dentist providers during school-based care.[9]

## PRACTICE METHODOLOGY AND BUSINESS OPPORTUNITIES

A practice methodology that includes the delegation of LAA to DHPs, FTE ( full-time equivalent hours worked by an employee) positive time management has been proposed within business improvement models. This process includes placement and usage of personnel according to highest level of license/training, which enhances capacity and provider time. At the core of this methodology, optimizing the time of the most costly (and usually the most profitable) provider should result in practitioners administering procedures that cannot be delegated to a less expensive FTE clinician. Many organizations and businesses operating within dental-safety-net and group-practice models have adopted this prototype, resulting in improved capacity and patient outcomes.[4,9,11–14]

A large portion of the health-care system is employing programs that feature FTE positive time management; however, this application is not frequently observed in dental practice. In fact, a recent analysis of dentist providers denoted that expanded-duty hygienists and assistants are underutilized according to maximum legal ability, although they have a positive impact on dental care quality.[14] Lack of knowledge and experience in using enhanced-function auxiliaries within a team-based delivery model is one reason proposed for this occurrence.[15–16] In order for these limitations to be overcome, better socialization of team-based models is necessary throughout dental school curriculum, as well as in post-graduate continuing education and professional practice.[16]

Although limited in number, previous studies have reported on the operational benefits of delegating LAA. In published analyses, dentist employers report delegation of LAA to improve capacity, productivity, scheduling, and patient satisfaction.[5,10–11,17] While the current literature allows for an understanding of basic results, the depth of research does not allow for analysis of specific areas of impact and requires further research.[10–11,18]

**Table 1:** Frequency of dental hygienists' local anesthetic administration, based on practice activity and injection technique[3]

| Practice activity | Infiltration injections | Nerve block injections | Field block injections |
|---|---|---|---|
| **General dentistry** | 1–3 times per week* | 1–2 times per week | Rarely used |
| **Pediatric dentistry** | Rarely used | Rarely used | Rarely used |
| **Periodontal dentistry** | 4–5 times per week | 3–4 times per week | 3–4 times per week |
| **Public health** | 3–5 times per week | 1–3 times per week | 1–3 times per week |

*Respondents reported a mean work week at 28 hours

## CONCLUSION

As patient-care methodology changes, health-care systems are adopting team-oriented patient-care models. Dentists are seeing a change in roles and responsibilities, which requires providers to increase delegation and determine the best means of supervision. Improved capacity, financial sustainability, and patient outcomes can result when practitioners work at their highest level of training. This includes DHPs who have the ability to administer local anesthetics. The dental profession needs to develop a national consensus on LAA delegation and training, and it needs to enhance team-oriented patient care. **DE**

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## ASK DR. KAYE ABOUT DIGITAL DENTISTRY

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We have to use our judgment and become less forgiving if the new ways are not adopted. We need to ensure that our goals and expectations are clear and obvious.

### 8. DEVELOP YOUR OWN CUSTOMIZED DIGITAL INTEGRATION SOLUTION

We have found that not all practices are alike when it comes to adopting these technologies. It is important to set your own specific objectives and customize a solution that will help you attain those objectives. Reaching out to peers who have had successes and have interacted with consultants, vendors, or manufacturers can be helpful.

At the New York Center for Digital Dentistry, we partner with many offices and organizations to support the integration of open-source digital solutions. Our work is tailored to the individual needs of each dentist and office, creating customized digital integration business plans.

As always, I welcome your feedback and comments. **DE**