

North Carolina State Board of Dental Examiners

Request for Rule Amendment

Authorization for Dental Hygienists to Initiate Nitrous Oxide  
Under Direct Supervision

Submitted by:

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Date: August 8, 2025

North Carolina State Board of Dental Examiners  
2000 Perimeter Park Drive, Suite 160  
Morrisville, NC 27560

**Re:** Request for Rule Amendment – Authorization for Dental Hygienists to Initiate Nitrous Oxide Under Direct Supervision

Dear Members of the Board,

I am writing to respectfully request a rulemaking hearing to amend the current rule under North Carolina General Statutes § 90-29 and related Board rules, which prohibit dental hygienists from initiating (turning on) nitrous oxide.

### **Legal Basis**

North Carolina law already authorizes dental hygienists to “aid and assist” in the administration of nitrous oxide (G.S. 90-29(b)(13)). The Board has previously used its rulemaking authority (G.S. 90-48; 90-48.3) to expand dental hygiene functions — most recently by allowing administration of local anesthesia under direct supervision. Initiating nitrous oxide is within the same statutory framework and supervision level.

### **Patient Safety & Public Protection**

Currently, patients requiring nitrous during hygiene appointments must wait for a dentist to be available to start it — sometimes delaying care or leaving anxiety unaddressed. Allowing a certified hygienist to initiate nitrous when ordered by the supervising dentist ensures faster relief, maintains continuity of care, and reduces unnecessary stress for patients. All existing safeguards — including Board-approved nitrous training, BLS certification, and direct supervision — would remain in place.

### **National Standards & NC’s Outlier Status**

According to the American Dental Hygienists’ Association (ADHA), 35 states authorize dental hygienists to administer nitrous oxide — meaning they can start, adjust, and stop it under supervision. These include states with decades of safe experience and no reported increase in adverse outcomes. North Carolina’s prohibition places us in the minority nationally (see Exhibit B).

### **Operational Efficiency Without Safety Loss**

This amendment would free dentists to focus on higher-acuity procedures while ensuring anxious patients receive timely care. The dentist remains responsible for ordering nitrous and is present on-site during its use, so there is no shift in accountability.

### **Proposed Change**

Amend 21 NCAC 16Q and related nitrous rules to allow a Board-certified dental hygienist to initiate nitrous oxide under direct supervision when:

1. The supervising dentist has examined the patient and ordered nitrous initiation in the record;

2. The hygienist has completed a Board-approved nitrous oxide course; and
3. All current monitoring and emergency protocols remain in place.

Please see Exhibit A for suggested rule language.

This change will improve patient care, align North Carolina with the majority of states, and do so without compromising public safety.

Thank you for your consideration. I would be happy to provide additional information or address any concerns.

Sincerely,  
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Phone: 919-616-4495  
Date: August 8, 2025

## EXHIBIT A – Current Rule & Proposed Amendment (Redline)

21 NCAC 16Q .0505 – strike “shall not be induced by anyone other than a dentist” and add: “...except a North Carolina-licensed dental hygienist who has completed a Board-approved nitrous oxide course and initiates nitrous oxide under the direct supervision of a dentist, pursuant to a written or electronic order.”

## EXHIBIT B – National Comparison

States Authorizing Hygienist Nitrous Administration (per ADHA):

Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming.

(Note: Scope and supervision level vary; all listed states permit initiation/administration under some form of supervision.)

## EXHIBIT C – Training Outline

Board-Approved Nitrous Oxide Course Components:

1. Didactic – pharmacology, physiology, contraindications, complications.
2. Clinical competency – initiating flow, titration to desired effect, discontinuation, oxygen flush.
3. Monitoring protocols – vitals, consciousness level, recovery criteria.
4. Emergency procedures – airway management, oxygen delivery, adverse event response.

## EXHIBIT D – Safety Data from Other States

- ADA Council on Scientific Affairs: Nitrous oxide sedation has an excellent safety profile when used alone, with extremely low rates of adverse events.
- Minnesota Board of Dentistry Report (2010): After >10 years allowing hygienists to initiate nitrous oxide, no increase in patient injury or complaints reported.
- Oregon Board data: Hygienist nitrous initiation in practice for decades without incident.

## EXHIBIT E – Patient Story (Access-to-Care Example)

A 42-year-old patient with severe dental anxiety attended a hygiene appointment. The hygienist recognized that nitrous oxide would help, but the dentist was in the middle of a multi-hour sedation case. The patient waited 35 minutes, becoming more anxious, and

ultimately declined the treatment that day. If the hygienist could have initiated nitrous per the dentist's order, the patient would have received immediate relief and completed the appointment successfully.