

# Legislative Analysis

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## NITROUS OXIDE ADMINISTRATION BY DENTAL HYGIENISTS

Mitchell Bean, Director  
Phone: (517) 373-8080  
<http://www.house.mi.gov/hfa>

**House Bill 4675 as enrolled**  
**Public Act 30 of 2004**  
**Sponsor: Rep. Barb Vander Veen**  
**House Committee: Health Policy**  
**Senate Committee: Health Policy**

### Second Analysis (10-3-05)

**BRIEF SUMMARY:** The bill would allow a dental hygienist to administer nitrous oxide, allow a dental assistant to monitor and assist in the administration of nitrous oxide, establish a fee for dental hygienists seeking certification to administer nitrous oxide and intraoral block and infiltration anesthesia, and prescribe educational requirements for a dental assistant who performs certain procedures.

**FISCAL IMPACT:** The bill would have a fiscal impact to state government. For detailed information, see Fiscal Information later in this analysis.

### **THE APPARENT PROBLEM:**

Reportedly, the number of practicing dentists has declined nationwide, while the field of dental hygiene has been growing. As patient case loads increase, dentists have been delegating more and more job tasks to their hygienists and assistants. Until recently, however, Michigan law has prohibited dental hygienists from administering local anesthesia to their patients.

For several years, a task force formed between the Michigan Dental Hygienist Association and the Michigan Dental Association has studied the situation and has sought to amend the law. The task force believes that allowing hygienists to administer local anesthesia under the direct supervision of a dentist could promote efficient and quality dental care. Public Act 423 of 2002 amended the Public Health Code to allow dental hygienists who had passed a stringent training course and examination to administer intraoral block and infiltration anesthesia to patients 18 years of age and older.

The 2002 legislation originally included a provision to allow a dental hygienist to administer nitrous oxide, but was removed in order to allow further review of the issue. Approximately 30 states or more currently allow hygienists to administer local anesthesia and/or nitrous oxide. In over 30 years of hygienists administering nitrous oxide, no deaths or serious injuries have occurred. After careful review, it has been decided to again offer legislation to expand the scope of practice of dental hygienists to include the administration of nitrous oxide.

## ***THE CONTENT OF THE BILL:***

Currently, only a licensed dentist can administer nitrous oxide to a patient. The bill would amend the Public Health Code to allow a dental hygienist to also administer nitrous oxide, and to allow a dental assistant to monitor and assist in the administration of the drug.

Dental hygienist. Under a dentist's direct supervision, a dental hygienist may currently administer intraoral block and infiltration anesthesia to a patient who is at least 18 years old. The bill would expand the scope of practice for hygienists to include the administration of nitrous oxide analgesia to a patient who is 18 years of age or older. However, the authority of a dental hygienist to administer nitrous oxide would be limited to those circumstances in which the concentration of the drug was not more than 50 percent.

In addition to the training course, examination, and certification now required for the administration of local anesthesia, a dental hygienist would have to complete a course containing at least four hours of didactic instruction and four hours of clinical experience in nitrous oxide analgesia. The course would have to include training in nitrous oxide analgesia medical emergency techniques, pharmacology of nitrous oxide, and nitrous oxide techniques. If available, a course in selection of pain control modalities should be taken by the hygienist intending to administer either local anesthesia or nitrous oxide analgesia.

A state or regional board-administered written examination would have to be successfully completed within 18 months of completing the course work in nitrous oxide analgesia, if such an examination were available and approved by the Department of Community Health (DCH). As in the case of certification to administer local anesthesia, applying for certification in the administration of nitrous oxide would be at the discretion of the hygienist. The bill would specify that the certification for administering either local anesthesia or nitrous oxide would have to be issued or documented by the DCH or its designee. The certificate would not be subject to renewal but would become part of the dental hygienist's permanent record. It would have to be prominently displayed in the dental hygienist's principal place of employment. The fee for a person seeking certification for completion of the requirements to administer nitrous oxide and/or intraoral block and infiltration anesthesia would be \$10.

Dental assistants. The bill would expand the scope of practice for registered dental assistants by allowing them, under a dentist's direct supervision, to monitor and assist the administration of nitrous oxide analgesia. *Assisting* would be defined as setting up equipment and placing the face mask. The term would not include titrating and turning on or off equipment. The nitrous oxide levels would have to be preset by the dentist or dental hygienist and could not be adjusted by the dental assistant except in the case of an emergency. In an emergency, the dental assistant could turn off the nitrous oxide and administer 100 percent oxygen. *Monitoring* would mean observing levels, admonishing, and reporting to the dentist or dental hygienist.

Under a dentist's delegation and direct supervision, a registered dental assistant could assist and monitor the administration of nitrous oxide analgesia by the dentist or dental hygienist if the dental assistant had successfully completed a course in assisting and monitoring the administration of the drug offered by a dental or dental assisting program accredited by the Commission on Dental Accreditation of the American Dental Association and approved by the DCH. The course would have to contain a minimum of five hours of didactic instruction and include the following content:

- Nitrous oxide analgesia medical emergencies techniques;
- pharmacology of nitrous oxide techniques; and,
- nitrous oxide techniques.

Currently, upon delegation by a dentist and under the direct supervision of a dentist, a registered dental assistant may place, condense, and carve amalgam restorations and take final impressions for indirect restorations. Under the bill, to do so would require a dental assistant to successfully complete a course offered by a dental or dental assisting program accredited by the Commission on Dental Accreditation of the American Dental Association and approved by the DCH. The course would need a minimum of 20 hours' didactic instruction followed by a comprehensive clinical experience of sufficient duration that validated clinical competence through a criterion based assessment instrument.

In order to continue doing procedures relating to intra-oral dental procedures currently allowed by the code, a dental assistant would have to successfully complete a course on those procedures, also offered by a dental or dental assisting program accredited by the Commission on Dental Accreditation of the American Dental Association and approved by the DCH, that contained a minimum of ten hours of didactic and clinical instruction.

(The Public Health Code defines "direct supervision" of a dentist to mean that a dentist designates the patient upon whom the procedures are to be performed and describes the procedures to be performed; examines the patient both before prescribing the procedures and upon completion of the procedures; and is physically present in the office at the time the procedures are being performed.)

Michigan Board of Dentistry. Within 30 days of the bill's effective date, the board would have to develop patient safety and equipment practice guidelines for dentists that delegate to dental hygienists and dental assistants the administration of nitrous oxide analgesia. The practice guidelines would have to be consistent with national recommendations.

MCL 333.16611

### ***FISCAL INFORMATION:***

House Bill 4675, as enacted, has cost implications for the Department of Community Health, Bureau of Health Professions. Fees will support the costs of the certification program, which is optional and non-renewable. If annually 10 percent of the dental

hygienists licensed in Michigan were to choose to seek the state certification, a \$10 fee would provide approximately \$9,100 of state revenue per year. Currently 9,049 dental hygienists are licensed in Michigan.

The bill also includes modest cost implications with an increase in the Department's responsibility for approval of courses now required for dental professionals to administer or assist in the administration of local anesthesia or nitrous oxide, take impressions for indirect restorations, and perform certain intra-oral dental procedures. The bill also requires the Board of Dentistry to establish certain guidelines.

### ***ARGUMENTS:***

#### ***For:***

The majority of states already allow dental hygienists, and in some cases dental assistants, to administer nitrous oxide. This is an appropriate practice as dental hygienists are highly trained health professionals; the educational curriculum for nationally registered dental hygienists is almost identical to that for registered nurses. As the case loads in dental offices increase due to a decline in the numbers actively practicing, it is necessary for dentists to shift some duties to appropriately trained staff. Without doing so, dentists may be forced to turn away new patients or patients may have to wait weeks or months for appointments.

The bill is loaded with safety features. The bill would require training and examination in administering nitrous oxide, and could only be done under the direct supervision of the dentist. Machines used in dental offices differ from those used in hospitals; hospitals may use higher concentrations of nitrous oxide than the machines do in dental offices, and unlike dental offices, hospitals may mix the nitrous oxide with other drugs. When administered by a dental hygienist, the nitrous oxide could not exceed 50 percent. Also, equipment used in dental offices automatically shut off if the oxygen fails. In addition, where masks used in hospitals often cover both the nose and mouth, a mask used in dental offices covers only the nose – thereby allowing a patient to have some control over the amount he or she breathes in.

Though dental assistants could monitor and assist in the administration of nitrous oxide, they also would be required to undergo additional training. They would be restricted to setting up the equipment and placing the face mask, observing the levels of the drug, and reporting to the dentist or hygienist. If an emergency were to occur, the assistant could shut off the nitrous oxide and administer 100 percent oxygen.

This issue has been studied and debated by dentists, dental hygienists and assistants, and anesthesiologists. Many of the safeguards incorporated into the bill were recommendations made by members of these groups. Data from other states support that it is appropriate for trained dental hygienists to provide this service, and that it is safe for dental assistants to assist and monitor the procedure.

***For:***

The bill would increase patient safety by requiring dental assistants to successfully complete a department-approved training course before performing certain procedures on patients.

***Against:***

When legislation was enacted in 2002 to allow hygienists to administer local anesthesia, concerns were raised then by some in the dental profession because of the potential for harm to the patient. The same is true for nitrous oxide, which can cause serious side effects, even death. Shifting responsibility to other office staff simply because dentists are too busy to do what they are trained to do is not a good enough reason. Some procedures need to remain in the hands of the more highly trained dentists, and better methods to recruit new members to the profession need to be developed.

Legislative Analyst: Susan Stutzky  
Fiscal Analyst: Susan Frey

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