

ABSTRACT

Many people with special needs (PSN) have difficulty having good oral health or accessing oral health services because of a disability or medical condition. The number of people with these conditions living in community settings and needing oral health services is increasing dramatically due to advances in medical care, deinstitutionalization, and changing societal values. Many of these individuals require additional supports beyond local anesthesia in order to receive dental treatment services. The purpose of this consensus statement is to focus on the decision-making process for choosing a method of treatment or a combination of methods for facilitating dental treatment for these individuals. These guidelines are intended to assist oral health professionals and other interested parties in planning and carrying out oral health treatment for PSN. Considerations for planning treatment and considerations for each of several alternative modalities are listed. Also discussed are considerations for the use of combinations of modalities and considerations for the repeated or frequent use of these modalities. Finally, the need to advocate for adequate education and reimbursement for the full range of support alternatives is addressed. The Special Care Dentistry Association (SCDA) is dedicated to improving oral health and well being of PSN. The SCDA hopes that these guidelines can help oral health professionals and other interested individuals and groups to work together to ensure that PSN can achieve a "lifetime of oral health."

KEY WORDS: special needs, guidelines, sedation, anesthesia, dental treatment, disabilities

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Special Care Dentistry Association consensus statement on sedation, anesthesia, and alternative techniques for people with special needs

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Purpose

The Special Care Dentistry Association (SCDA) is dedicated to improving oral health and well-being for people with special needs (PSN). In this context, PSN refers to people who have difficulty achieving, maintaining, or accessing oral health services because of a disability or medical condition. The number of people with these conditions living in community settings and needing oral health services is increasing dramatically due to advances in medical care, deinstitutionalization, and changing societal values in the age of consumerism.^{1,2} Many of these individuals require additional supports beyond local anesthesia in order to receive dental treatment services.

The dental profession has developed and uses a number of methods to help individuals with special needs receive dental treatment services. These include the following:

- General anesthesia delivered in hospitals, surgical centers, and dental offices
- Sedation—ranging from minimal sedation to deep sedation
- Behavioral support
- Physical support
- Psychological support
- Social support
- Prevention strategies

A number of organizations have developed guidelines for the use of anesthesia and sedation in the dental setting. These are often referred to as guidelines for controlling “pain or anxiety,” although anesthesia and sedation may be used for other reasons. These existing guidelines have been reviewed in other articles in this issue. The existing guidelines tend to be focused on the use of medications, and most have specific recommendations for training, techniques of administration, and necessary equipment for the delivery of anesthesia and sedation in conjunction with dental treatment.³⁻¹⁹ Only a few discuss indications for the use of these “pharmacological supports.”^{17,18} Only one relates specifically to PSN.¹³ None of these guidelines discuss the use of pharmacological supports in relation to the full range of alternatives listed above.

This consensus statement is not intended to duplicate the many existing guidelines that focus on training, techniques, and equipment needed to provide anesthesia and sedation services. Rather, the purpose of this consensus statement is to focus on the decision-making process for choosing a method of treatment or combination of methods to facilitate dental treatment. It is meant to assist oral health professionals and other interested parties in planning and carrying out oral health treatment for PSN.

The consensus statement development process

This consensus statement is the result of a consensus development process within the SCDA. In June 2006, a *Consensus Conference on Anesthesia, Sedation, and Alternative Techniques for Providing Dental Treatment for People with Special Needs* was held in conjunction with the SCDA's annual meeting. The conference was sponsored and organized by the American Association of Hospital Dentists, a component organization of the SCDA. Ten individuals were recruited to form a consensus development committee. Each member of the committee performed a literature

review and prepared a background article on a subject related to the topic of the conference. During the conference, the authors presented the background articles as well as a draft of this statement. Input was solicited from the audience at the conference as well as from other association members. Given the fact that other associations with guidelines in this area were revising their guidelines, some time was spent after the conference assessing those newly released guidelines and making appropriate alterations to the SCDA's consensus statement. The committee considered all the input and revised the statement accordingly. This consensus statement was presented to the Special Care Dentistry Board of Directors and was approved in May 2008.

The decision-making process

As with all healthcare procedures, a decision to use one or more of the modalities listed above should only be made after thorough consideration of the associated risks and benefits followed by obtaining an informed consent from the patient or someone authorized to make healthcare decisions for that individual. A more thorough description of considerations in obtaining an informed consent is contained in other articles in this issue. Analyzing risks and benefits and weighing the relative importance of the factors that need to be considered in recommending a course of action require the judgment of an experienced professional. Some of the patients for whom one or more of the modalities listed above would be indicated include:

1. Individuals with cognitive impairment or emotional conditions who have difficulty understanding what is expected in a dental treatment situation.
2. Patients whose fear about receiving dental treatment prevents them from receiving the needed treatment.
3. Patients who are unable to sit in a dental chair or remain still enough to have dental procedures performed.

4. Patients who have extensive dental needs that would require extended dental treatment over a prolonged period of time.
5. Patients who require dental procedures that cannot easily be performed with local anesthesia because of an inability to achieve adequate local anesthesia for that procedure.
6. Individuals with complex medical problems who require intra- and peri-operative monitoring.
7. Individuals with complex medical problems (e.g., severe hypertension and cardiac or respiratory disease) whose physiologic state will be more safely controlled in a sedated or anesthetized state.

In addition to the indications listed above, there are additional factors to be evaluated in making a decision to use one or more of the modalities listed above. These include the following:

1. The patient's health history and current medical and physical status.
2. The likelihood of the contemplated procedures being completed successfully.
3. The time and effort required from the patient and healthcare providers.
4. The cost of the contemplated procedures.
5. The risk of side effects of any aspect of the treatment.
6. The social environment and support available for the patient.
7. The availability of various treatment modalities.
8. The urgency of care required for that individual.

The American Society of Anesthesiologists (ASA) physical status classification system is a widely used system for classifying the risk of anesthesia for patients.²⁰ It includes the following risk categories:

- P1 = a normal healthy patient
- P2 = a patient with mild systemic disease
- P3 = a patient with severe systemic disease

- P4 = a patient with severe systemic disease that is a constant threat to life
- P5 = a moribund patient who is not expected to survive without the operation
- P6 = a declared brain-dead patient whose organs are being removed for donor purposes

In general, there is more concern with patients with higher ASA classifications, particularly above P2, but this classification system cannot be relied upon alone for decision making about any individual patient. As with the decision about what modalities to use, professional judgment must be exercised in weighing the factors listed above.

With ASA IV and V patients, an extensive evaluation of risk versus benefit of conducting the dental procedure under general anesthesia will need to be conducted in coordination with the managing physician and communicated with the patient and/or family since these physical status categories carry with them significantly elevated risk of intra- and postoperative morbidity or mortality.

Finally, it is important to consider how the treatment under consideration fits into a long-term plan for achieving and maintaining oral health for this individual PSN. This may require evaluating the best way to perform procedures needed in the short term, but should also include developing a long-term plan that will allow the individual to have a “lifetime of oral health.” Although it may be difficult to develop a long-term plan for a patient with a complex situation, an attempt should be made to address the following questions:

1. What can be done to help an individual receive future dental care with less pharmacological, behavioral, or physical support? For example, if someone needs treatment using general anesthesia in a hospital now, what can be done to help him/her receive dental treatment in a dental office in the future with less medication or none at all?
2. How can oral health be maintained after the immediate procedures

needed in the short term are completed? For example, can an intensive prevention program be instituted to reduce the likelihood that this individual will develop new or recurring oral diseases in the future?

Alternatives for facilitating dental treatment

The following is a description of the modalities listed earlier that can be used to help individuals with special needs receive dental treatment services, with a discussion of the advantages and disadvantages of each modality. Also included is information about combinations of modalities and frequency of administration. The definitions for anesthesia and sedation used here are from the American Dental Association's *Guidelines for the Use of Sedation and General Anesthesia by Dentists*.⁴

1. General anesthesia
“General anesthesia is a drug-induced loss of consciousness during which patients are not arousable, even by painful stimulation. The ability to independently maintain ventilatory function is often impaired. Patients often require assistance in maintaining a patent airway, and positive pressure ventilation may be required because of depressed spontaneous ventilation or drug-induced depression of neuromuscular function. Cardiovascular function may be impaired.”
A review of the risks and indications for general anesthesia in hospital and outpatient settings is included in other articles in this issue. General anesthesia services are generally available for dental treatment in hospitals or surgical centers. Dentist and physician anesthesiologists and other anesthesia providers are available in certain areas to provide general anesthesia in dental office settings. In addition, some dentists are trained and equipped to provide general anes-

esthesia services in their own offices in conjunction with dental treatment. Of the modalities discussed here, general anesthesia is the most effective modality for ensuring that the provider will be able to complete dental procedures on a patient who has difficulty accepting dental treatment. However, it is also the most complex to arrange; in some circumstances is the most expensive of the modalities listed; and has the greatest risk of side effects. In many communities, general anesthesia services are not readily available for dental treatment because of the reluctance of local hospitals to provide operating room time for dentists, either due to scheduling or due to reimbursement issues; the lack of dental or other anesthesiologists willing to come to dental offices and provide this treatment; unfavorable fiscal return for the time and effort spent on the part of the dentists; or the lack of training and licensing of dentists to provide these services themselves.

2. Sedation

A number of levels of sedation have been described. These include:

- Deep sedation—which is “a drug-induced depression of consciousness during which patients cannot be easily aroused but respond purposefully following repeated or painful stimulation. The ability to independently maintain ventilatory function may be impaired. Patients may require assistance in maintaining a patent airway, and spontaneous ventilation may be inadequate. Cardiovascular function is usually maintained.”
- Moderate sedation—“a drug-induced depression of consciousness during which patients respond purposefully to verbal commands, either alone or accompanied by light tactile stimulation. No interventions are required to maintain a patent airway, and spontaneous ventilation is adequate. Cardiovascular function is usually maintained.”
- Minimal sedation—“a minimally depressed level of consciousness,

produced by a pharmacological method, that retains the patient's ability to independently and continuously maintain an airway and respond normally to tactile stimulation and verbal command.

Although cognitive function and coordination may be modestly impaired, ventilatory and cardiovascular functions are unaffected."

A more thorough description and comparison of various techniques for delivering sedation are contained in other articles in this issue. As with general anesthesia, sedation is generally available for dental treatment in hospitals or surgical centers. Dental and other anesthesiologists are available in certain areas to provide sedation in a dental office. In addition, some dentists are trained and equipped to provide sedation services in their offices in conjunction with dental treatment. Moderate and particularly minimal sedation require less training, less equipment, and less stringent licensing than deep sedation or general anesthesia and therefore are available in a larger number of dental offices.

Sedation, particularly moderate and minimal sedation, is easier to arrange and generally less expensive than deep sedation or general anesthesia. This procedure generally has a lower risk of side effects than do deep sedation or general anesthesia.

3. Behavioral support

Behavior support describes a range of nonpharmacologic techniques that can be used to help people receive dental treatment in a dental office. These techniques are described in greater detail in other articles in this issue. Behavioral supports can allow some individuals who might otherwise need medications or physical support to have procedures completed with less medication or physical support or none at all.

In contrast to many pediatric patients, some PSN can have complex behavioral profiles as a consequence of their specific disability and overall life

experiences. Behavioral support for such patients calls for a committed and confident team approach and may require a commitment of time and even additional staffing. Finding a pathway to effective behavioral support that facilitates clinical care in a more typical fashion may provide the greatest access to care and maintenance over a lifetime for PSN.

In general, behavior supports have fewer side effects than the use of medications. However, the cost in time and effort for both the provider and the patient must be considered. Also, under the current healthcare system, third-party reimbursement for behavior supports is generally not available.

4. Physical support

Physical support describes a range of nonpharmacological techniques for limiting mobility using physical means to help an individual hold still during dental treatment. This topic is discussed in more detail in other articles in this issue. Physical support can allow some individuals who might otherwise need medications to receive dental treatment with less medication or none at all.

As with behavioral supports, physical supports can have fewer physical or systemic side effects than the use of medications. However, some people are concerned about psychological or emotional consequences. There is a movement among some advocates to create "restraint-free" environments for PSN. Providers who use physical supports should be sure that everyone involved is fully informed about the indications and nature of the procedures to be followed, that the techniques used meet local, state, and federal regulations, and that an informed consent is obtained for the use of these techniques.

5. Psychological support

Many people, including PSN, are afraid of receiving dental treatment. It is possible, to reduce or remove this fear using psychological treatments. This topic is described in greater

detail in other articles in this issue. Psychological treatments can allow some individuals who might otherwise need medications or physical support to receive dental treatment to have procedures completed with less medication or physical support or none at all.

As with behavioral supports, psychological treatments have fewer physical or systemic side effects than the use of medications. However, the cost in time and effort for both the provider and the patient must be considered. Under the current healthcare system, a third-party reimbursement for psychological interventions in conjunction with dental treatment may not be available. However, practitioners and office staff can make a significant difference for many patients by studying their interaction skills, adjusting tone of voice, using or not using specific words, and using appropriate physical movements. These methods are not expensive, and they need not slow things down overall. In addition, if psychological treatment can allow an individual to have dental treatment with less or no medication, the cost can be significantly less than when using sedation or anesthesia repeatedly over the individual's lifetime.

6. Social support

Social support refers to interventions that take place outside a dental office and are integrated into a social support system in place for an individual. Social supports can include: integration of oral health assessment and planning with general health planning processes, using social support and case management systems to facilitate preparation for dental visits, and enlisting general health and social service professionals in providing oral health interventions outside the dental office. Social supports can involve the use of case management strategies, community organization, transportation plans, and in-home services to work with caregivers and their clients. These services promote

oral health prevention; prepare individuals to receive dental services; organize appointments, records, and transportation; and include other activities that can reduce barriers to receiving dental treatment. This topic is discussed in more detail in other articles in this issue.

Social supports have the potential to reduce the need for pharmacological interventions or physical supports in order to maintain oral health in populations of PSN. Social supports do not have any of the physical or systemic side effects that accompany the use of medications. However, the cost in time and effort for the overall support system and for the provider and patient must be considered. Also, under the current healthcare system, third-party reimbursement for social supports is generally not available.

7. Prevention strategies

Preventive programs using modern “medical model” oral health prevention strategies have the potential to reduce the burden of disease among PSN and therefore reduce the need for dental procedures. Combined with social support systems, these interventions have the potential to reduce the need for pharmacological interventions or physical supports in order to maintain oral health in populations of PSN.

Prevention programs do not have side effects such as those that accompany the use of medications. However, the cost in time and effort for both the provider and the patient must be considered. Also, under the current healthcare system, third-party reimbursement for preventive programs, particularly community-based programs, is generally not available.

8. Combined approaches

There are little data in the literature about the effect of combining various modalities on this list. Many practitioners treating PSN already employ several (or all) of these strategies to render the best care possible for their individual patients. It is reasonable

to assume that combining several of the modalities listed above could have advantages over using a single modality in many circumstances. For example, the use of behavior support or psychological support might result in a patient who can have dental treatment with less medication or physical support than might otherwise be needed. Using social supports can help prepare people for dental treatment or lessen other barriers to care. Finally, employing effective prevention strategies can reduce the burden of disease that needs to be treated. This may result in an individual being able to have less complex treatment performed with less or no medication or physical support, lower cost, and less time and effort.

It is reasonable to conclude that oral health professionals who have the training, equipment, and experience and who are prepared to use any of the modalities listed above will be in the best position to recommend and use the optimal combination of modalities for a particular situation.

9. Frequency of administration

As with the use of combinations of modalities, there are little data in the literature to guide decision making about the frequency of administration of the modalities listed above.

However, some of the modalities listed, particularly moderate and deep sedation and general anesthesia, have a greater risk for physical or systemic side effects than other modalities. The decision to use these modalities repeatedly or frequently must be made after careful consideration of a number of factors. These include the potential cumulative risk versus the benefit of long-term or frequent use. The decision to use moderate or deep sedation or general anesthesia repeatedly or frequently for dental treatment should be made in the context of a long-term plan to help the individual achieve or maintain a “lifetime of oral health.” If someone needs to have moderate or deep sedation or general anesthesia or

even physical support to receive dental treatment, the ideal long-term plan would include an intensive preventive program and the application of behavioral, psychological, and/or social supports to reduce the need for pharmacological or physical support in the future. There are situations, however, where this “ideal plan” will not be possible because the individual’s ability to receive dental treatment will not be altered even with these techniques, or because resources to apply these techniques are not available.

The best outcome is achieved if someone who initially needs to have moderate or deep sedation or general anesthesia or physical support to receive dental treatment could have dental treatment without these modalities in the future or at least need them less frequently. Oral health professionals and other interested individuals and groups should include this goal in any long-term plan to the fullest extent possible.

Impact of financing on oral health treatment decisions

Some PSN require more time, effort, equipment, and energy to render the same quantity and quality of dental care provided to other patients. Because many PSN have dental procedures reimbursed by public funding programs with low reimbursement rates, or do not have any financial support for dental procedures, treating PSN can result in less reimbursement in situations where additional time and expertise are required. This results in a financial disincentive to treat PSN.

The way in which health care is financed can also influence the choice of treatment modalities. In some states, public and private reimbursement programs provide reimbursement for dental treatment in a hospital under general anesthesia or for pharmacological supports in other settings. They do not

generally provide reimbursement, however, for behavioral or psychological interventions, social supports, or community-based prevention strategies. This funding disparity results in treatment decisions based on reimbursement rather than the optimal choice for a given individual. Even in states where there is funding for hospital dental services, it is often inadequate and results in a lack of access to operating room time for dentists and long waiting times for treatment.

If oral health professionals are to be able to recommend optimum treatment for an individual based on evidence of efficacy and safety of various modalities, there must be adequate reimbursement for all appropriate treatment options. Oral health professionals and other interested individuals and groups must continue to advocate for adequate funding of the full range of modalities needed to support PSN achieving a "lifetime of oral health."

Impact of education on oral health treatment decisions

Education of health professionals also impacts treatment decisions. There are inadequate educational experiences in professional education programs on providing oral health services for PSN. This is particularly true in predoctoral dental education programs. Current accreditation requirements for dental and dental hygiene education programs only require graduates to be competent in "assessing the treatment needs" of patients with special needs, not in providing any treatment.^{21,22} There are requirements and educational experiences that prepare graduates of advanced general dentistry residency programs to provide dental services for a wide variety of PSN.^{23,24} However, graduates of these programs represent only about 25% of dental school graduates annually, thus providing an inadequate supply of providers trained to care for these populations.

At the urging of the SCDA, the American Dental Education Association

(ADEA) adopted a resolution at its 2005 annual session calling for the Commission on Dental Accreditation to strengthen the predoctoral and dental hygiene standards by adopting standards that "ensure that education programs include both didactic instruction and clinical experiences involving treatment of PSN as defined by the Commission, and appropriate for the type of educational program in which the student is enrolled."²⁵ At this time, the Commission on Dental Accreditation has not acted on this recommendation from the ADEA.

It is clear that training impacts a provider's comfort in accepting and providing care for an individual with special needs. It also impacts treatment decisions, as a provider will be less likely to consider treatment alternatives that they are unable to provide. Although education is not the only barrier that providers face, it is critical that educational programs enhance the training provided in this area to eliminate this educational barrier.

Summary

Many PSN have difficulty maintaining good oral health or accessing oral health services because of a disability or medical condition. The number of people with these conditions living in community settings and needing oral health services is increasing dramatically due to advances in medical care, deinstitutionalization, and changing societal values. Many of these individuals require additional supports beyond local anesthesia in order to receive dental treatment services. The purpose of this consensus statement is to focus on the decision-making process for choosing a method of treatment or a combination of methods for facilitating dental treatment for these individuals. These guidelines are intended to assist oral health professionals and other interested parties in planning and carrying out oral health treatment for PSN. Considerations for planning treatment and considerations for each of several alternative modalities are listed. Also discussed are considerations for the use of combinations of

modalities and considerations for the repeated or frequent use of these modalities. Finally, the need to advocate for adequate education and reimbursement for the full range of support alternatives is addressed.

The SCDA is dedicated to improving oral health and well being for PSN. The SCDA hopes that these guidelines can help oral health professionals and other interested individuals and groups to work together to ensure that PSN can achieve a "lifetime of oral health."

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