

Policy on Patient Safety

Latest Revision

2021

Purpose

The American Academy of Pediatric Dentistry (AAPD) recognizes patient safety as an essential component of quality oral health care for infants, children, adolescents, and those with special health care needs. The AAPD encourages dentists to consider thoughtfully the environment in which they deliver health care services and to implement practices to improve patient safety. This policy is not intended to duplicate safety recommendations for medical facilities accredited by national commissions such as The Joint Commission or those related to workplace safety such as Occupational Safety and Health Administration.

Methods

This document is a revision of the policy developed by the Council on Clinical Affairs, adopted in 2008¹, and last revised in 2018². This policy is based on a review of current dental and medical literature, including search of the PubMed®/MEDLINE database using the terms: patient safety AND dentistry, fields: all; limits: within the last 10 years, humans, English. Four hundred seventy-seven articles met these criteria. Papers for review were chosen from this list and from the references within selected articles.

Background

All health care systems should be designed to provide a practice environment that promotes patient safety.³ The World Health Organization (WHO) defines patient safety as “the reduction of risk of unnecessary harm associated with healthcare to an acceptable minimum.”⁴ The most important challenge in the field of patient safety is prevention of harm, particularly avoidable harm, to patients during treatment and care.⁴ Dental practices must be in compliance with federal laws that help protect patients from preventable injuries and potential dangers such as the transmission of disease.⁵⁻⁷ Laws help regulate hazards related to chemical and environmental factors (e.g., spills, radiation) and facilities (e.g., fire prevention systems, emergency exits).⁸ The AAPD’s recommendations and oral health policies provide additional information regarding the delivery of safe pediatric dental care.⁹⁻²² Furthermore, state dental practice acts and hospital credentialing committees are intended to ensure the safety of patients and the trust of the public by regulating the competency of and provision of services by dental health professionals.²³⁻²⁵

Patient-centered health care systems that focus on preventing errors are critical to assuring patient safety.^{25,26} Some

How to Cite: American Academy of Pediatric Dentistry. Policy on patient safety. The Reference Manual of Pediatric Dentistry. Chicago, Ill.: American Academy of Pediatric Dentistry; 2024:27-31.

possible sources of error in the dental office are miscommunication, interruptions, stress, fatigue, failure to review the patient’s medical history (e.g., current medications, allergies), and lack of standardized records, abbreviations, and processes.^{3,25,27} Treating the wrong patient or tooth/surgical site, delay in treatment, disease progression after misdiagnosis, inaccurate referral, incorrect medication dosage ordered/administered, breach in sterilization, waterline contamination, and unintentional swallowing, aspiration, or retention of a foreign object are examples of patient safety events that occur in dentistry.²⁸⁻³² Adverse events may be classified in terms of severity of harm (e.g., none, mild, moderate, severe, death).³³

Standardized processes and workflows help assure clerical and clinical personnel execute their responsibilities in a safe and effective manner.²⁷ Policy and procedure manuals that describe a facility’s established protocols serve as a valuable training tool for new employees and reinforce a consistent approach to promote safe and quality patient care.²⁷ Identifying deviations from established protocols and studying patterns of occurrence can help reduce the likelihood of adverse events.¹³

Safety checklists are used by many industries and health-care organizations to reduce preventable errors.^{34,35} Data supports the use of procedural checklists (e.g., pre-sedation) to minimize the occurrence of adverse events in dentistry.³⁶⁻³⁹ In addition, order sets, reminders, and clinical guidelines built into an electronic charting system may improve adherence to best practices.³² Zero harm, the concept that a patient will not experience preventable harm or injury, is a goal in medicine today.⁴⁰ The medical profession generally has embraced the systematic approach to safety change, but the dental profession has been slower to adopt this approach.⁴¹⁻⁴³ The journey to achieve zero harm does not occur without effort. For change to occur in dental practices and organizations, it is important that dental professionals publicly commit to the establishment of a safety culture, encourage effective teamwork, and promote effective communication and training.^{43,44} Reducing clinical errors requires a careful examination of adverse events^{27,32,45} and near-miss events^{26,46}. In a near-miss event, an error was committed, but the patient did not experience clinical harm.^{26,46} Detection of errors and problems within a

ABBREVIATIONS

AAPD: American Academy of Pediatric Dentistry. **WHO:** World Health Organization.

practice or organization may be used as teaching points to motivate changes and avoid recurrence.⁴⁷ A root cause analysis can be conducted to determine causal factors and corrective actions so these types of events may be avoided in the future.^{34,40,44,48} Embracing a patient safety culture demands a nonpunitive or no-blame environment that encourages all personnel to report errors and intervene in matters of patient safety.^{26,48} Alternatively, a fair and just culture is one that learns and improves by openly identifying and examining its own weaknesses; individuals know that they are accountable for their actions but will not be blamed for system faults in their work environment beyond their control.^{40,44} Evidence-based systems have been designed for healthcare professionals to improve team awareness, clarify roles and responsibilities, resolve conflicts, improve information sharing, and eliminate barriers to patient safety.^{40,49,50}

The environment in which dental care is delivered impacts patient safety. In addition to structural issues regulated by state and local laws, other design features should be planned and periodically evaluated for patient safety, especially as they apply to young children. Play structures, games, and toys are possible sources for accidents and infection.^{51,52}

The dental patient would benefit from a practitioner who follows current literature and participates in professional continuing education courses to increase awareness and knowledge of best current practices and public health concerns. Scientific knowledge and technology continually advance, and patterns of care evolve due, in part, to recommendations by organizations with recognized professional expertise and stature, including the American Dental Association, The Joint Commission, WHO, Institute for Health Improvement, and Agency for Healthcare Research and Quality. Data-driven solutions are possible through documenting, recording, reporting, and analyzing patient safety events.^{30,41,53} Continuous quality improvement efforts including outcome measure analysis to improve patient safety should be implemented into practices.^{32,54} Patient safety incident disclosure is lower in dentistry compared with medicine since a dental-specific reporting system does not exist in the United States.^{41,42} Identifiable patient information that is collected for analysis is considered protected under the Health Insurance Portability and Accountability Act (HIPAA).⁵⁵

Dental practitioners should be aware of and minimize the potential for patient fire during procedures when an ignition source, fuel, and oxidizer are present simultaneously.⁵⁶⁻⁵⁸ (Figure) Patient fire is rare but can result in injury and death.^{56,57} Sparks from burs, lasers, and electrosurgical units can serve as an ignition source.⁵⁷ Combustible agents (e.g., dry gauze, throat pack, paper and cotton products; hair; petroleum-based lubricants; alcohol-based products; rubber dam and nitrous mask) can act as a fuel.⁵⁷ Delivery of nitrous oxide and/or oxygen, both of which are oxidizers, can produce an oxidizer enriched atmosphere (OEA).

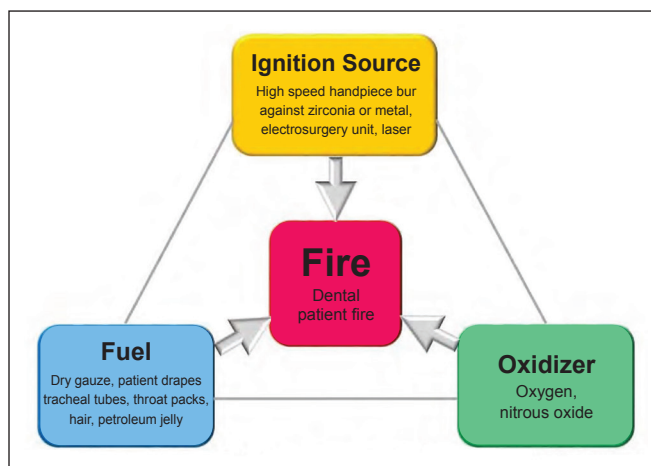


Figure. Dental fire triangle: dental fire may result when all three factors are present simultaneously.

Policy statement

To promote patient safety, the AAPD encourages:

- patient safety instruction in dental curricula to promote safe, patient-centered care.
- professional continuing education by all licensed dental professionals to maintain familiarity with current regulations, technology, and clinical practices.
- compliance with and recognition of the importance of infection control policies, procedures, and practices in dental health care settings in order to prevent disease transmission from patient to care provider, from care provider to patient, and from patient to patient.⁴⁻⁶
- routine inspection of physical facility in regards to patient safety. This includes development and periodic review of office emergency and fire safety protocols and routine inspection and maintenance of clinical equipment.
- recognition that informed consent by the parent, and assent from the child when applicable, is essential in the delivery of health care¹⁰ and effective relationship/communication practices can help avoid problems and adverse events. The parent should understand and be actively engaged in the planned treatment.
- accuracy of patient identification with the use of at least two patient identifiers, such as name and date of birth, when providing care, treatment, or services.
- an accurate and complete patient chart that can be interpreted by a knowledgeable third party.²¹ Standardizing abbreviations, acronyms, and symbols throughout the record is recommended.²¹
- an accurate, comprehensive, and up-to-date medical/dental history including medications and allergy list to ensure patient safety during each visit. Ongoing communication with health care providers, both medical and dental, who manage the child's health helps ensure comprehensive, coordinated care of each patient.

- a pause or time out with dental team members present before an invasive procedure to confirm the patient, planned procedure, and tooth/surgical site are correct.
- inclusion of fire prevention and management protocols in procedure and emergency plans. A time out may be used to assess the fire potential⁵⁷ of a procedure when nitrous oxide or oxygen is to be used. If an ignition source and fuel are present, risk of a patient fire may be reduced by monitoring the flow of gases and using high volume suction for at least one minute prior to the use of a potential ignition source.^{57,59} In addition, maintaining a moist working field and avoiding cutting dry can decrease fire risk.^{58,59}
- appropriate staffing and supervision of patients treated in the dental office.
- adherence to AAPD recommendations on behavior guidance,⁹ especially as they pertain to use of advanced behavior guidance techniques (i.e., protective stabilization, sedation, general anesthesia).
- standardization and consistency of processes within the practice. A policies and procedures manual, with ongoing review and revision, could help increase employee awareness and decrease the likelihood of untoward events. Dentists should emphasize procedural protocols that protect the patient's airway (e.g., rubber dam isolation), guard against unintended retained foreign objects (e.g., surgical counts; observation of placement/removal of throat packs, retraction cords, cotton pellets, and orthodontic separators), and minimize opportunity for iatrogenic injury during delivery of care (e.g., protective eyewear).
- minimizing exposure to nitrous oxide by maintaining the lowest practical levels in the dental environment. This includes routine inspection and maintenance of nitrous oxide delivery equipment as well as adherence to clinical recommendations for patient selection and delivery of inhalation agents.
- minimizing radiation exposure through adherence to the as low as reasonably achievable (ALARA) principle, equipment inspection and maintenance, and patient selection criteria.
- all facilities performing sedation for diagnostic and therapeutic procedures to maintain records that track adverse events. Such events then can be examined for assessment of risk reduction and improvement in patient safety.
- dentists who utilize in-office anesthesia providers take all necessary measures to minimize risk to patients. Prior to delivery of sedation/general anesthesia, appropriate documentation shall address rationale for sedation/general anesthesia, informed consent, instructions to parent, dietary precautions, preoperative health evaluation, and any prescriptions along with the instructions given for their use. Rescue equipment should have

regular safety and function testing and medications should not be expired. The dentist and anesthesia providers must communicate during treatment to share concerns about the airway or other details of patient safety.

- ongoing quality improvement strategies and routine assessment of risk, adverse events, and near misses. A plan for improvement in patient safety and satisfaction is imperative for such strategies.⁴⁰
- comprehensive review and documentation of indication for medication order/administration. This includes a review of current medications, allergies, drug interactions, and correct calculation of dosage.
- vigilance in monitoring public health concerns (e.g., severe acute respiratory syndrome coronavirus 2 [SARS-CoV-2]). This includes taking appropriate steps to ensure patient and staff safety as recommended by local and national sources with recognized expertise.
- promoting a culture where staff members are empowered and encouraged to speak up or intervene in matters of patient safety.

References

1. American Academy of Pediatric Dentistry. Policy on patient safety. *Pediatr Dent* 2008;30(suppl):80-2.
2. American Academy of Pediatric Dentistry. Policy on patient safety. *Pediatr Dent* 2018;40(special issue):135-8.
3. Bailey E, Tickle M, Campbell S. Patient safety in primary care dentistry: Where are we now? *Br Dent J* 2014;217(7):333-44.
4. World Health Organization. Patient safety: Making health care safer. Geneva, Switzerland: World Health Organization; 2017. License CC BY-NC-SA 3.0 IGO. Available at: "<http://apps.who.int/iris/bitstream/handle/10665/255507/WHO-HIS-SDS-2017.11-eng.pdf?sequence=1&isAllowed=y>". Accessed October 18, 2021.
5. Boyce JM, Pittet D, Healthcare Infection Control Practices Advisory Committee, HICPAC/SHEA/APIC/IDSA Hand Hygiene Task Force. Guideline for hand hygiene in health-care settings. Available at: "<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5116a1.htm>". Accessed October 18, 2021.
6. World Health Organization. WHO guidelines on hand hygiene in health care. Available at: "<https://www.who.int/publications/i/item/9789241597906>". Accessed October 18, 2021.
7. American Academy of Pediatric Dentistry. Policy on infection control. *The Reference Manual of Pediatric Dentistry*. Chicago Ill.: American Academy of Pediatric Dentistry; 2021:178-81.
8. U.S. Department of Labor, Occupational Safety and Health Administration. OSHA Law and Regulations. Available at: "<https://www.osha.gov/law-regs.html>". Accessed October 18, 2021.

References continued on the next page.

9. American Academy of Pediatric Dentistry. Behavior guidance for the pediatric dental patient. *The Reference Manual of Pediatric Dentistry*. Chicago Ill.: American Academy of Pediatric Dentistry; 2021:306-24.
10. American Academy of Pediatric Dentistry. Informed consent. *The Reference Manual of Pediatric Dentistry*. Chicago Ill.: American Academy of Pediatric Dentistry; 2021:480-3.
11. American Academy of Pediatric Dentistry. Pediatric restorative dentistry. *The Reference Manual of Pediatric Dentistry*. Chicago Ill.: American Academy of Pediatric Dentistry; 2021:386-98.
12. American Academy of Pediatric Dentistry. Policy on acute pediatric dental pain management. *The Reference Manual of Pediatric Dentistry*. Chicago Ill.: American Academy of Pediatric Dentistry; 2021:127-9.
13. American Academy of Pediatric Dentistry. Policy on minimizing occupational health hazards associated with nitrous oxide. *The Reference Manual of Pediatric Dentistry*. Chicago Ill.: American Academy of Pediatric Dentistry; 2021:130-1.
14. American Academy of Pediatric Dentistry. Prescribing dental radiographs for infants, children, adolescents, and individuals with special health care needs. *The Reference Manual of Pediatric Dentistry*. Chicago Ill.: American Academy of Pediatric Dentistry; 2021:258-61.
15. American Academy of Pediatric Dentistry. Protective stabilization for pediatric dental patients. *The Reference Manual of Pediatric Dentistry*. Chicago Ill.: American Academy of Pediatric Dentistry; 2021:325-31.
16. American Academy of Pediatric Dentistry. Use of anesthesia providers in the administration of office-based deep sedation/general anesthesia to the pediatric dental patient. *The Reference Manual of Pediatric Dentistry*. Chicago Ill.: American Academy of Pediatric Dentistry; 2021:372-6.
17. American Academy of Pediatric Dentistry. Use of antibiotic therapy for pediatric dental patients. *The Reference Manual of Pediatric Dentistry*. Chicago Ill.: American Academy of Pediatric Dentistry; 2021:461-4.
18. American Academy of Pediatric Dentistry. Use of local anesthesia in pediatric dental patients. *The Reference Manual of Pediatric Dentistry*. Chicago Ill.: American Academy of Pediatric Dentistry; 2021:332-7.
19. American Academy of Pediatric Dentistry. Use of nitrous oxide for pediatric dental patients. *The Reference Manual of Pediatric Dentistry*. Chicago Ill.: American Academy of Pediatric Dentistry; 2021:338-43.
20. American Academy of Pediatric Dentistry. Oral health care for the pregnant pediatric dental patient. *The Reference Manual of Pediatric Dentistry*. Chicago Ill.: American Academy of Pediatric Dentistry; 2021:277-86.
21. American Academy of Pediatric Dentistry. Record-keeping. *The Reference Manual of Pediatric Dentistry*. Chicago, Ill.: American Academy of Pediatric Dentistry; 2021:484-91.
22. Cote CJ, Wilson S. American Academy of Pediatric Dentistry, American Academy of Pediatrics. Guidelines for monitoring and management of pediatric patients before, during, and after sedation for diagnostic and therapeutic procedures. *Pediatr Dent* 2019;41(4):E26-E52.
23. American Association of Dental Boards. Composite. 31st ed. Chicago, Ill.: American Association of Dental Boards; 2020:1-110.
24. American Academy of Pediatric Dentistry. Policy on hospital staff membership. *The Reference Manual of Pediatric Dentistry*. Chicago Ill.: American Academy of Pediatric Dentistry; 2021:134-5.
25. The Joint Commission. 2020 National Patient Safety Goals Ambulatory Care Program. Available at: "https://www.jointcommission.org/-/media/tjc/documents/standards/national-patient-safety-goals/2020/simplified_2020-hap-npsgs-eff-july-final.pdf". Accessed October 18, 2021.
26. Ramoni RB, Walji MF, White J, et al. From good to better: Towards a patient safety initiative in dentistry. *J Am Dent Assoc* 2012;143(9):956-60.
27. Jadhav A, Kumar S, Acharya S, Payoshnee B, Ganta S. Patient safety practices in dentistry: A review. *Int J Sci Study* 2016;3(10):163-5.
28. Black I, Bowie P. Patient safety in dentistry: Development of a candidate 'never event' list for primary care. *Br Dent J* 2017;222(10):782-8.
29. Cullingham P, Saksena A, Pemberton MN. Patient safety: Reducing the risk of wrong tooth extraction. *Br Dent J* 2017;222(10):759-63.
30. Obadan EM, Ramoni RB, Kalendarian E. Lessons learned from dental patient safety case reports. *J Am Dent Assoc* 2015;146(5):318-26.
31. Ensaldo-Carrasco E, Suarez-Ortegon MF, Carson-Stevens A, Cresswell K, Bedi R, Sheikh A. Patient safety incidents and adverse events in ambulatory dental care: A systematic scoping review. *J Patient Saf* 2021;17(5):381-91. Available at: "<https://doi.org/10.1097/PTS.0000000000000316>". Accessed October 18, 2021.
32. American Academy of Pediatrics. Principles of patient safety in pediatrics: Reducing harm due to medical care. *Pediatrics* 2011;127(6):1199-210. Erratum in *Pediatrics* 2011;128(6):1212.
33. Kalendarian E, Obadan-Udoh E, Maramaldi P, et al. Classifying adverse events in the dental office. *J Patient Saf* 2021;17(6):e540-e556. Available at: "<https://doi.org/10.1097/PTS.0000000000000407>". Accessed October 18, 2021.
34. Harden SW, Roberson JB. 8.5 tips for dental safety checklists. *Today's FDA* 2013;25(6):40-3, 45.
35. World Health Organization. Surgical Safety Checklist 2009. Available at: "http://apps.who.int/iris/bitstream/10665/44186/2/9789241598590_eng_Checklist.pdf". Accessed October 18, 2021.

36. Bailey E, Tickle M, Campbell M, O'Malley L. Systematic review of patient safety interventions in dentistry. *BMC Oral Health* 2015;15(152):1-11.
37. Saksena A, Pemberton MJ, Shaw A, Dickson S, Ashley MP. Preventing wrong tooth extraction: Experience in development and implementation of an outpatient safety checklist. *Br Dent J* 2014;217(7):357-62. Erratum in *Br Dent J* 2014;217(10):585.
38. Robert R, Patel C. Oral surgery patient safety concepts in anesthesia. *Oral Maxillofac Surg Clin North Am* 2018;30(2):183-93.
39. Wali R, Halai T, Koshal S. WHO surgical safety checklist training: An alternative approach to training in local safety standard for invasive procedures. *Eur J Dent Educ* 2020;24(1):71-8.
40. Leonard M, Frankel A, Federico F, Frush K, Haradan C. *The Essential Guide for Patient Safety Officers*, 2nd ed. Oakbrook Terrace, Ill.: The Joint Commission, Inc.; 2013:1-160.
41. Thusu S, Panasar S, Bedi R. Patient safety in dentistry – State of play as revealed by a national database of errors. *Br Dent J* 2012;213(E3):1-8.
42. Stahl J, Mack K, Cebula S, Gillingham. Dental patient safety in the military health system: Joining medicine in the journey to high reliability. *Military Med* 2020;185(1):262-8.
43. Yansane A, Lee J, Hebbali N, et al. Assessing the patient safety culture in dentistry. *JDR Clin Trans Res* 2020;5(4):399-408.
44. Frankel AS, Leonard MW, Denham CR. Fair and just culture, team behavior, and leadership engagement: The tools to achieve high reliability. *Health Serv Res* 2006;41(4 Pt 2):1690-709.
45. Hurst D. Little research on effective tools to improve patient safety in the dental setting. *Evid Based Dent* 2016;17(2):38-9.
46. Frankel A, Haraden C, Federico F, Lenoci-Edwards J. A framework for safe, reliable, and effective care. White Paper. Cambridge, Mass.: Institute for Healthcare Improvement and Safe & Reliable Healthcare; 2017. Available at: "http://www.ihl.org/resources/Pages/IHI_WhitePapers/Framework-Safe-Reliable-Effective-Care.aspx". Accessed October 18, 2021.
47. Tucker AL, Edmondson AC. Why hospitals don't learn from failures: Organizational and psychological dynamics that inhibit systemic change. *Calif Manag Rev* 2003;45(2):55-72.
48. Ramoni R, Walii MF, Tavares A, et al. Open wide: Looking into the safety culture of dental school clinics. *J Dent Educ* 2014;78(5):745-56.
49. Sheppard F, Williams M, Klein V. TeamSTEPPS® and patient safety in healthcare. *J Healthc Risk Manag* 2013;32(3):5-10.
50. U.S. Department of Health and Human Services Agency for Healthcare Research and Quality. TeamSTEPPS® Dental Module. Available at: "<https://www.ahrq.gov/teamstepps/dental/index.html>". Accessed October 18, 2021.
51. Rathmore MH, Jackson MA. Infection prevention and control in pediatric ambulatory services. *Pediatrics* 2017;140(5):1-23.
52. American Academy of Pediatrics Committee on Injury, Violence, and Poison Prevention. Policy statement – Prevention of choking among children. *Pediatrics* 2010;125(3):601-7.
53. Spera AL, Saxon MA, Yepes JF. Office-based anesthesia: Safety and outcomes in pediatric dental patients. *Anesth Prog* 2017;64(3):144-52.
54. Kiersma ME, Plake KS, Darbishire PL. Patient safety institution in U.S. health professions education. *Am J Pharm Educ* 2011;75(8):162.
55. U.S. Department of Health and Human Services Office for Civil Rights. HIPAA Administration Simplification Regulation Text. March 2013. Available at: "<https://www.hhs.gov/sites/default/files/hipaa-simplification-201303.pdf>". Accessed October 18, 2021.
56. Weaver JM. Prevention of fire in the dental chair. *Anesth Prog* 2012;59(3):105-6.
57. Bosack R, Bruley M, VanCleave A, Weaver J. Patient fire during dental care: A case report and call for safety. *J Am Dent Assoc* 2016;147(8):661-7.
58. Chen JW. Fire during deep sedation and general anesthesia-urban myth or real nightmare? *Pediatr Dent Today* 2019;LIV(6):32. Available at: "https://www.pediatricdentistrytoday.org/assets/3/23/Fire_During_Deep_Sedation_and_General_Anesthesia.pdf". Accessed October 18, 2021.
59. VanCleave A, Jones J, McGlothlin J, Saxen M, Sanders B, Vinson L. The effect of intraoral suction on oxygen-enriched surgical environments: A mechanism for reducing the risk of surgical fires. *Anesth Prog* 2014;61(4):155-61.