

DENTAL EXPRESSIONS[®]

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Dental Implants: An Updated Look at Risks and Safety Measures

Implants are a major component of modern dentistry, with an imposing array of techniques, products and options available to treat a wide variety of restorative needs.¹ Since *Dental Expressions*[®] last addressed the issue in 2008, the field has evolved considerably in terms of products and diagnostic and planning tools. However, recent CNA claim data suggest that patient safety may not be keeping pace with technical advancements. This edition of *Dental Expressions*[®] is designed to help dentists recognize the significant professional liability exposures associated with implant therapy and also implement risk management measures that can help protect patients from injury and poor outcomes, and practitioners from complaints and claims.

IMPLANT CLAIM TRENDS

By the close of 2016, CNA will publish its first in-depth dental claim report entitled "*Dental Professional Liability: Claim Report 2016*," examining closed claims from 2011 to 2015.² This section, in part, reviews data related to that study.

In 2008, the frequency (i.e., number) of claims relating to dental implants had been relatively stable since the late 1990s, while severity (i.e., average claim cost) was consistently high compared to other dental procedures. Based on data from 2004-2007, approximately 3 percent of CNA reported dental claims involved implants, comprising more than 7 percent of total incurred losses (i.e., the costs or financial obligations, including indemnity and expenses, resulting from the resolution of a claim).

¹ While dental implantology is not currently recognized as a clinical specialty by the American Dental Association, a multitude of implant-related academic and continuing education opportunities are available to dentists seeking to refine or expand their surgical and restorative skills in this area. In addition, dental specialists or general practitioners who meet the requirements of the American Board of Oral Implantology/Implant Dentistry Board can receive [certification in implant dentistry](#).

² The claim report will be published on the [Professional Protector Plan[®] for Dentists](#) website.

Recent implant-related claim data indicate that both the number and cost of claims in this area are on the rise. Figures 1 and 2 present implant-related closed claims from 2011 to 2015 by percentage of all claims and total incurred loss. Implant-related injuries seem to be a concern not just in the United States, but also internationally. In [a recent interview](#) with the Agency for Healthcare Research and Quality's Patient Safety Network, Dr. Bernardo Perea-Pérez³ ranks injuries from dental implant treatment among the top five dental safety issues in Spain. He notes that dental implant treatments produce the greatest number of adverse incidents, according to the database of the Spanish Observatory for Dental Patient Safety.

NERVE INJURIES

Most implant-related closed claims (82 percent) and associated losses (89 percent) involve implant placement surgery. Total losses for all implant-related closed claims are approximately \$20 million, representing about 15 percent of all incurred professional liability losses during the five-year period.

Trigeminal nerve injuries are the major factor contributing to these implant-related losses. About 16 percent of all implant-related professional liability claims – and 26 percent of claims with paid indemnity of \$10,000 to \$1,000,000 – involve nerve injuries. With respect to severity, nerve injury claims represent 37 percent of all implant-related incurred losses. (Note that these figures are conservative, as they reflect only claims where nerve injury was the most prominent or severe injury, and exclude claims where such an injury was of secondary importance.) The data demonstrate the need for dentists to carefully review their preoperative patient assessment and surgical protocols, especially in relation to prevention, assessment and management of nerve injuries.⁴

While nerve injury is a major cause of loss, other causes also are cited. When an implant fails, complex and expensive corrective treatment may be required to remedy the situation. Such claims often involve allegations that the implant failed due to lack of bone integration, infection, poor implant placement (i.e., the implant was placed at a poor angle or too close to a natural tooth or another implant), or selection of the wrong fixture. Relative to other dental procedures, patients are more likely to file a claim or lawsuit following implant failure due to the major investment directed toward restoring lost dentition and to the possibility of significant recovery. Plaintiff attorneys are more likely to pursue such cases for the same reason.

³ Director de la Escuela de Medicina Legal y Forense of Facultad de Medicina at the Universidad Complutense de Madrid and Spanish Observatory for Dental Patient Safety (OESPO).

⁴ For more information on nerve injuries and post-injury patient management, see [Dental Expressions® 2015–Issue 1](#).

Figure 1 – Implant-related Claims as a Percentage of All Closed Claims

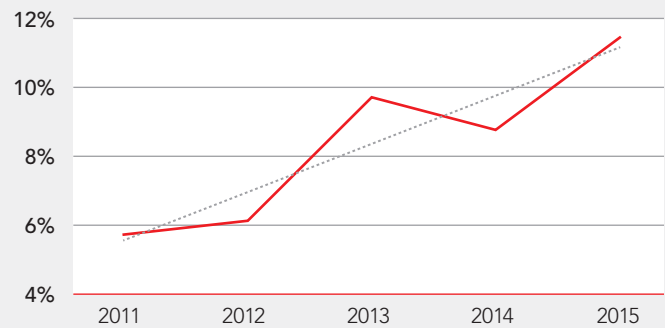
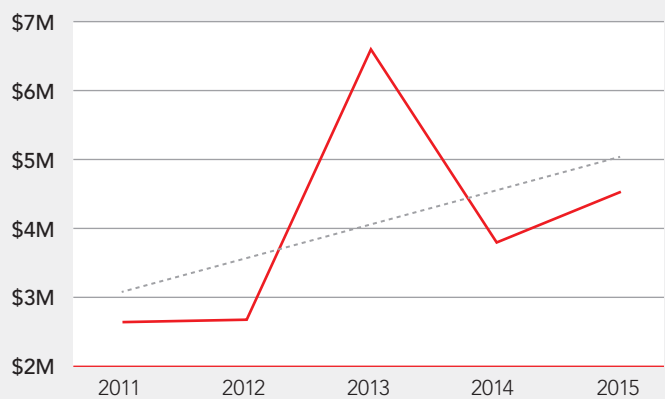


Figure 2 – Total Incurred Loss for All Implant-related Closed Claims



RISK CONTROL STRATEGIES

Patient selection and assessment, case planning, informed consent, safe surgical technique and documentation are critical to minimizing the risk associated with implant placement, achieving successful surgical and cosmetic outcomes, and satisfying patients.

1. Patient selection

Dentists should begin by investigating whether the patient has systemic disease processes – such as uncontrolled diabetes, bleeding disorders or hypertension – that should be addressed before implant surgery is considered.

Equally important, according to CNA claim data, is proper assessment of a variety of local factors – especially nerve position and management, as well as sinus position on the maxilla. Notably, implant-related claims also include sinus infection and other sinus issues. Additional considerations are related to bone adequacy and quality, oral hygiene, occlusion, ridge morphology, periodontal status, extent of inter-incisal opening, keratinized gingival width and distance between proposed endosseous fixture sites.

Important non-clinical factors include tobacco and alcohol use, the patient's degree of cooperation and general attitude, level of self-care and ability to afford treatment. Carefully assess and manage the expectations of all patients, and do not accept patients with unrealistic expectations.

2. Pre-surgical diagnostics

Sound radiographic assessment – including [use of cone beam computed tomography](#) when indicated – is essential to implant success. Another critical factor involves selection of an appropriate implant system and fixture in terms of length, diameter and design. Though lingual nerve damage may occur during implant surgery, mandibular nerve compression injuries appear to be a more common hazard. Correct implant length is necessary in order to avoid such nerve injuries and to safeguard sinus spaces in the maxilla. Management of nerve injuries requires immediate assessment and action to prevent permanent nerve injury. For recommendations related to clinical management of implants and other types of nerve injuries, see [Dental Expressions® 2015–Issue 1](#).

3. Case planning

Many implant-related occurrences – including sinus perforation, nerve damage and poor angulation – can be attributed to lack of pre-surgical planning. The planning process should include the following steps:

- *Carefully and honestly consider the overall long-term prognosis* before proceeding with an implant.
- *Decide exactly who will do what, and when.* If the implant placement will be completed by someone other than the restorative dentist, establish sound communication early on in the process, sharing all relevant information about the case and patient.
- *Collaborate on the treatment plan.* No implant fixtures should be placed until the surgeon, patient and restorative dentist have all agreed on the plan. Many calls to the dental risk management support line related to implant therapy involve cases in which the patient arrives at the restorative dentist's office with implants before a functional and cosmetic assessment and restorative treatment plan has been established. The restorative dentist should proceed with caution in such cases, as any unexpected events that occur during this phase may be both damaging and costly.

- *Create a surgical stent to act as a guide for the surgeon when placing the implant* – a step that is too often ignored. By creating a working design of the final restoration (including an associated stent) prior to implant placement, dentists minimize the risk of having to restore poorly angled or otherwise unusable fixtures.
- *Use study models and 3D imaging* to facilitate pre-surgical case planning and communication.

4. Informed consent

Before commencing treatment, conduct a thorough informed consent discussion with the patient, including such topics as benefits of the implant, other available treatment options, and foreseeable risks both of undergoing the recommended procedure and of forgoing treatment altogether. Questions should be encouraged and fully answered. In general, it is advisable to use a written informed consent form, combined with a thorough progress note to document the discussion. [Informed consent form templates](#) are available on the Professional Protector Plan® for Dentists website.

Costs – both surgical and restorative – should be fully disclosed as part of the informed consent discussion. Be aware that it may be necessary to continue treatment even in the absence of payment, in order to avoid allegations of abandonment.

5. Safe surgical methods

The following clinical measures can mitigate the risks associated with placement of implants:

- *Adhere to a sterile surgical technique*, as infection is a significant hazard.
- *Irrigate copiously with sterile solution* during surgery to prevent bone overheating.
- *Administer antibiotics when warranted*, based upon one's assessment of the patient or the occurrence of surgical complications.
- *Utilize high-speed evacuation/suction and a throat barrier (such as gauze) during treatment* to prevent aspiration or swallowing of mishandled parts or tools.

6. Documentation

Thorough, accurate documentation is a critical risk control strategy for implant surgery, as well as all other dental procedures. All aspects of treatment, including patient discussions, should be noted in the patient record. For future reference, be sure to fully describe the implant fixture, including manufacturer, size, type, lot and any other pertinent identifiers.

In addition, retain original diagnostic models for at least a year after completion of the case, and ideally, until the state statute of limitations expires for the treatment. In the event of a complaint or claim, models for full arch and difficult or complex cases can be more beneficial to the legal defense effort than the patient notes. Dentists should stay abreast of state record retention requirements, as some states have specific retention requirements for study models as part of the state dental record retention regulations.

While more and more dentists are trained and qualified to place implants, CNA claim data reveal that the most effective means of reducing implant-related risk is to refer patients when appropriate, and to deny their requests for implant therapy when the prognosis is less than optimal or the case seems beyond one's level of experience. Careful patient assessment and selection, as well as sound case planning, execution and documentation, will help protect one's patients, practice and reputation from the threat of an implant-related malpractice claim.

CNA Risk Control Services

LOOKING FOR ADDITIONAL RISK MANAGEMENT INFORMATION?

Visit the Professional Protector Plan® for Dentists program website at www.protectorplan.com for additional resources. The site's Risk Management tab contains links to information about both our in-person CE seminars and our online self-study CE course.

Dental Risk Management Seminars

Dentists can obtain risk management information by attending any of the risk management seminars listed below, or by completing the CNA online self-study CE course (see above). For more information about our in-person seminars, please contact the nearest Professional Protector Plan state administrator agent.

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we can show you more.®

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