

Improving dentist-technician interaction and communication

There are more than 12,000 dental laboratories in the United States (B. Napier, co-executive director, National Association of Dental Laboratories, oral communication, Jan. 7, 2009), and their staff sizes vary from a single laboratory technician to hundreds of technicians. Many laboratories are specialized or cater to a certain type of client, while others are full-service laboratories. However, there appears to be a common problem regardless of the size or work orientation of the laboratories. That challenge is a lack of communication between dentists and laboratory technicians.

Dr. William Yancey and I convened a series of conferences, each known as The Dental Tech-

nology Summit, held each February from 2005 through 2009 in Chicago. The conferences were attended by representatives from the dental profession, the dental industry, laboratories, academic institutions, professional organizations (including the American Dental Association) and others. These conferences have identified most of the current problems in the dental industry. It was the consensus of the attendees of these conferences that one of the major challenges facing the laboratory industry and clinical dentistry is the lack of interaction and communication between dentists and technicians.^{1,2}

Additionally, in a questionnaire sent to laboratory directors of 199 dental laboratories

located in all 50 states, responses indicated that there is a lack of communication between dentists and laboratory technicians.³ That survey showed that a large percentage of respondents agreed that lack of communication by dentists to technicians is best reflected by inadequacy in work authorization forms sent to the technician.³ Other authors have pointed out the significant problems with the current state of dentist-laboratory technician communication.⁴⁻¹¹

I will suggest in this article several easily implemented policies that will improve dentist-laboratory interaction and communication and, subsequently, the quality of oral health services. Some of the following suggestions can be implemented whether or not your laboratory is close to your clinical office, and others require a close proximity of the two offices.

Gordon J. Christensen, DDS, MSD, PhD

ATTENDING CONTINUING EDUCATION COURSES TOGETHER

Although not a popular concept in the United States, in my opinion, dentists and technicians' joint attendance at continuing education (CE) events is one of the best methods to improve interaction and communication between the two. When dentists and technicians attend a course together, they hear and read the same information. Together, they discuss the course and the information provided. They determine the pertinent parts of the course related to their mutual interests, and it is quite likely that they will implement some of the information they have learned. If the laboratory you use is far from your office, you need to arrange a meeting together near the course location.

Hypothetical course. As an example of the significant potential value of enhancing dentist-technician communication via jointly attended CE classes, I will describe the benefits of these professionals' participating together in a course on a subject of high interest: zirconia-based crowns and fixed prostheses.

Zirconia frameworks. Recent research demonstrated the importance of using the optimum formulation and firing temperature of superficial ceramic or precise pressing of superficial ceramic over zirconia.¹² When dentists hear this information in a CE course, yet their technicians are unaware of these important laboratory challenges, these measures are not implemented, and patients suffer the results. Communication between the dentist and the technician is mandatory

to prevent these errors and is eased if they both learn the same information at the same time.

Tooth preparations. Some manufacturers have indicated that tooth preparations for all-ceramic crowns should be the same as or similar to porcelain-fused-to-metal (PFM) tooth preparations. Technicians from many laboratories have reported different observations to me. Although all-ceramic crowns can be made on PFM tooth preparations, somewhat deeper tooth preparations allow for stronger and more esthetic all-ceramic restorations by providing optimum space for both the zirconia and the superficial ceramic. Dentists cutting PFM tooth preparations for all-ceramic crowns compromise technicians' ability to provide optimum restorative results. Technicians learn this by trial and error, but dentists may never learn of it without communicating with their laboratory technicians.

Taper of full-crown tooth preparations for zirconia-based restorations. Often, the taper of full-crown tooth preparations is excessive because of deep previous restorations or previously overprepared teeth. If technicians allow only the manufacturer-suggested 0.3- to 0.5-millimeter thickness of zirconia to be milled as the framework, the superficial ceramic required for optimum tooth anatomy may be too thick, thus inviting superficial ceramic fracture. To prevent subsequent superficial ceramic fracture, the zirconia frameworks need to be built to simulate in miniature the anatomical characteristics of the eventual crown.¹² This example demonstrates the need for both dentist and technician to know this subject well and to

assist each other in avoiding superficial ceramic crown fracture in clinical service.

The bottom line: if dentists and technicians learn the full perspective on clinical techniques and processes in CE courses they attend together, better clinical results will ensue. Take your technician to CE courses with you.

HOLDING PRIVATE MEETINGS

Meeting with your laboratory technician is valuable if your laboratory is close to your practice. Going to breakfast or lunch together allows time for discussion of mutually important points related to laboratory and clinical subjects. Such meetings build collegiality, mutual understanding and trust. They allow the dentist and the technician to discuss specific difficult cases, assess materials, compare costs and characteristics of specific types of restorations, and evaluate decisions made relative to overall and specific questions.

DEVELOPING OPTIMAL COMMUNICATION IN LABORATORY ORDERS

Insufficient communication between dentist and technician is a well-known and universal problem. As a ridiculous but common example, some laboratory orders for removable partial dentures come to technicians in terms as limited as "Make partial—A2." Is there any wonder why such prostheses do not meet high quality standards? A number of states are passing laws requiring more two-way communication between dentists and laboratories. For example, the Florida Dental Laboratory Association has developed some sample

forms to help dentists and technicians comply with their state's new law.^{13,14}

In addition to better forms, I suggest instituting a few procedures that have the potential to increase the quality of communication.

Take digital photos of the patient. I prefer a relatively comprehensive series of images that competent staff members can take, but even just a few photos can be helpful for technicians. As an example, for an anterior fixed partial denture (FPD), I suggest at least taking photos of the following: a full face, a natural smile, the lips and cheeks retracted, and the dentist holding the selected shade tab adjacent to the remaining natural teeth. In addition, and for a more complete series, I prefer two lateral mirror views of the teeth in occlusion and mirror views of the maxillary and mandibular arches. This series of seven photos may be too comprehensive for every dentist or every case, but the dentist should at least send a photo of the teeth showing their color and anatomy and a shade tab held adjacent to the teeth.

In difficult cases, invite the technician to see the patient. When the laboratory and clinical offices are close together, the technician's observation of the patient is invaluable in difficult cases. When the technician actually sees the patient's smile characteristics, the color of the gingiva, the occlusion and any other peculiar characteristics, the clinical result will be better.

Describe the desired characteristics thoroughly. The dentist should provide a complete description of the restoration he or she desires: metal or

nonmetal materials, presence of ceramic or metal margins, the degree of tooth anatomy and staining preferred, and any other desired or peculiar characteristics, including pontic form. Many dentists compromise the quality of restorations by not providing enough information to technicians. I use custom drawings of my preference for tooth anatomy, specific pontic form or any other characteristics related to the patient being treated.

Consult by telephone regarding intermediate steps.

When a try-in of a denture or a framework try-in for a removable partial denture or an FPD requires some changes, the dentist should call the technician and describe the changes while the case is fresh in his or her mind. Communication by writing alone is seldom sufficient.

INCORPORATING TECHNICIANS INTO YOUR PRACTICE OR BUILDING

At the beginning of my career, I sent almost all laboratory work to laboratories distant from my office. The results usually were adequate, but occasionally, the quality of my work was compromised inadvertently because sending a prosthesis with minor problems back to the laboratory would have caused inconvenience for the patient and significant loss of income for the practice. The tendency was to accept some laboratory work that could have been improved in a few minutes if the technician had been on the premises. Therefore, for the latter portion of my career, my practice has included in-office laboratory technicians.

In my opinion, there is absolutely no comparison in the clinical quality level attainable via the in-office laboratory

versus the remote laboratory. When a laboratory technician is in the dentist's office and sees, even momentarily, most of the patients, color matching and occlusion automatically improve. The technician learns how many laboratory decisions influence clinical quality, thus improving the dentist's ability to produce high-quality esthetic results. If a crown, FPD, removable partial denture or complete denture is slightly wrong, it requires only a few minutes for the in-house technician to modify the restoration without forcing the patient to make a costly reappointment.

In my opinion, if a practitioner is placing 30 or more units of laboratory-made crowns or fixed prostheses per month, an in-house technician may be a better clinical and financial choice than sending laboratory work out to geographically distant laboratories. If a dentist is in a building with compatible peers, and the practices' combined number of units of fixed or removable prostheses meets the level needed to provide an adequate income for a technician or technicians, the dentists should consider bringing the laboratory into their practice or building.

MAKING POSTOPERATIVE TELEPHONE CALLS TO TECHNICIANS

While the treatment I have just completed for a patient is still in my mind, I like to call the technician to discuss what I saw clinically as the restoration was seated. Maybe a contact area was too tight, the occlusion was slightly too high or too low, a pontic form needed to be changed, the occlusion on a partial or complete denture was too high or the border extensions were too long. Even though I

corrected the problems, the technician needs to know how the restorations seated. This communication may reduce the number of such problems in future cases. Conversely, when a restoration drops into the mouth with little or no adjustment, it takes only a brief telephone call reporting the good news to help make a happy and confident technician.

INITIATING OR JOINING INCLUSIVE ORGANIZATIONS

For some unknown reason, U.S. dentists and technicians have segregated themselves into two autonomous camps when it comes to professional organizations and even study clubs. Seek out—or form yourself—organizations that encourage interaction between the two groups. Some of the most beneficial educational experiences in my professional life as a prosthodontist have been in such situations. We must learn from each other.

PROMOTING INTEGRATED EDUCATION OF DENTAL AND LABORATORY TECHNOLOGY STUDENTS

It makes sense for dental and laboratory technology students to be educated in the same environment, yet this practice seems largely to have gone by the wayside. How have we lost this concept? There are notable examples in which integrated dentist-technician educational programs are still functional, but most joint dentist-technician programs have disappeared. If you are a private practitioner, you can only

encourage the establishment and continuation of such programs. If you are an educator, my opinion is that it should be one of your primary goals to encourage and eventually incorporate these programs, either in the same school or by combining programs of dental schools with technicians' programs in nearby community colleges.

SUMMARY

Communication between dentists and dental technicians is known to be inadequate. Reasons for this problem are clear, but remedies have been slow to evolve in the United States. I suggest the following concepts for dentists and technicians to improve dentist-technician integration and communication and, ultimately, to improve patient care:

- attending continuing education courses together;
- holding private meetings;
- increasing the quality and scope of communication in laboratory orders;
- incorporating technicians into dental practices or buildings;
- making postoperative telephone calls to technicians;
- initiating or joining study clubs or joining dental organizations that include both dentists and technicians;
- promoting integrated education of dental and laboratory technology students.

Improving interaction and communication between dentists and laboratory technicians cannot be effected without proactive change on the part of both groups. ■

Dr. Christensen is the director, Practical Clinical Courses, and a cofounder and senior consultant, CR Foundation, Provo, Utah. He also is the senior academic advisor, Scottsdale Center for Dentistry, Scottsdale, Ariz.; an adjunct professor, Brigham Young University, Provo, Utah; and an adjunct professor, University of Utah, Salt Lake City. Address reprint requests to Dr. Christensen at CR Foundation, 3707 N. Canyon Road, Suite 3D, Provo, Utah 84604.

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