Give them what they need

This step-by-step approach will ensure effective communication with the laboratory and great clinical outcomes.

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Consumers with esthetically driven, complex restorative needs have propelled cosmetic dentistry into the 21st century. These patients want to keep their existing teeth and expect natural-looking dentition. To satisfy this modern consumer, restorative teams must know how to correct complex esthetic and functional problems, putting a greater demand on communication among dentists, laboratory technicians, and dental assistants. If this critical chain of communication breaks down, issues arise that can negatively affect all parties involved, including the patient.

Communication is key to keeping the process smooth. The restorative dental team and the dental lab must communicate with each other to ensure that both sides understand the direction and ultimate goal of the treatment plan.

“Every diagnostic or treatment decision should be made on the basis of understanding the reasons for the problem,” Dr. Pete Dawson said.

But before dentists can provide a comprehensive treatment plan, the patient must first undergo various procedures during an extensive record visit. Gathering patient information and understanding any signs of instability are vital steps for successful treatment.

During records appointments, be sure to do the following: a full series of x-rays, panoramic, study models, facebow transfer, CR bite, TMJ occlusal exam, digital photography, perio charting, doppler analysis, joint vibration analysis, and NP video.

Digital x-rays
Digital x-rays are computer generated images that require up to 90% less radiation than conventional film type x-rays. The Suni System is a reliable, easy-to-use digital x-ray system. Instead of using traditional x-ray film, the Suni System takes pictures in three sizes: 0, 1 and 2.

These x-rays eliminate the time spent waiting for film to process. Sensors instantly transmit pictures onto the video monitor in the treatment room, allowing the dental team to see the patient’s teeth and surrounding structures immediately while the patient reviews the results simultaneously. Computerized editing allows other benefits, including enlargement, highlighting, magnifying, inverting, clear viewing, and contrasting of x-ray images.

Digital photography and patient videos
Digital photography allows dentists to show laboratory technicians the position of the teeth relative to the patient’s face. Digital photographs are just as important as digital radiographs. In most instances, laboratory technicians do not have direct patient contact, so the more information you provide them, the better they can perform for you. They not only need to see where patients started, but also where they are in the process.

We take videos of the patients and...
ask them what they like and dislike about their smile. We determine what they would change if they could and what they think the laboratory technician needs to know about them. We ask them to speak and recite numbers and vowels, which allows us and the laboratory to see the incisal edge position, lip support, and lip closure path.

We send all the pre-operative, prep, and provisional photographs on a disc, along with the speech video, to the laboratory.

**Study models**

Choosing a tray that best fits the patient’s arch form is the most important step in creating an accurate impression. The Direct Flow impression tray from 3M ESPE (Fig. 1) is our tray of choice. It incorporates a self-retentive fleece strip designed to hold the impression material securely in the tray, eliminating any need for a tray adhesive.

We also use Flexitime VPS impression material by Heraeus Kulzer, which is available in a familiar cartridge (1:1) or automix (5:1) foil pack dispenser for mixing machines. Its dimensional stability lasts up to six weeks, and it can be poured multiple times.

We use the heavy-body material in a tray and place it in the patient’s mouth. We allow it to set, then remove it and reline the tray with light body material (Fig. 2). We then place the tray back in the mouth (Fig. 3), creating the impression.

**TMJ/occlusal exam**

“The most critical part of the TMJ Analysis is to determine if the joints can accept firm loading with no sign of tension or tenderness,” said Dr. Dawson, who wrote the book *Functional Occlusion from TMJ to Smile Design*.

Bilateral manipulation is a logical way to load-test the TMJs. Once centric relation or adapted centric posture is confirmed, you can proceed with occlusal analysis and treatment planning.

**Facebow transfer and mounting model**

Facebow transfer is important when restoring fixed anterior and posterior as well as removable prosthetics. The facebow record provides critical information to the laboratory and helps obtain predictable results. One benefit of using the Denar Sli- dematic Facebow 9 (Fig. 4) is that multiple transfer jigs may be used with only one measuring bow. In most cases, the dental assistant can mount the maxillary cast, meaning you have facebow transfer capability without sacrificing accuracy or time. The dental assistant can attach an ar-
articulator index to the Denar articulator and mount the maxillary cast using only the bitefork assembly from the dental office. Each articulator index positions the bitefork assembly on any Denar articulator, so the relationship with the condyles recorded on each patient is reproduced accurately on the articulator.

After the facebow transfer is taken (Figs. 5 and 6) and the impressions are poured, mount the study cast on a semi-adjustable articulator (Denar Combi II by Waterpik Technologies Inc., Fig. 7). Mount the cast in centric relation to determine which teeth may be preventing the condyles from seating in the most stable position. Some offices complete the diagnostic mock-up before mounting the study casts, often leading to a tremendous amount of extra work in the mouth. All mock-ups should be done on an articulator (Fig. 8).

These preliminary steps precede the diagnostic wax-up, reduction guides and matrices, shade-taking, provisionalization, and creating the prescription—all of which will be spotlighted next month in part 2 of this article.

Taken together, all these elements comprise a comprehensive communication procedure to ensure that the lab has everything it needs to fabricate the best possible restoration.