Shannon Pace, DA II  
Nash Institute for Dental Learning  
Charlotte, North Carolina

Communication among the dentist, assistant and the laboratory is now even more critical for the overall achievement of ultimate esthetic results. Shades were limited years ago. The only shade guide was the Vita Guide (Vita Zahnfabrik; US Distributor, Vident). Now, more patients are bleaching and even natural teeth are lighter and brighter. Today there is a higher demand for elective treatment, which requires the need for matching shade guides to the proper material.

Where do you begin? How can you achieve greater success in communication between the dental office and the laboratory so that the ultimate result can be achieved? Important factors to remember are listed in Table 1.

Preoperative Study Cast

Preoperative study casts are the first step in communicating with the laboratory. Choosing the proper tray to fit the arch form, deciding the size of the tray, and making sure the most posterior teeth are included. There are two types of impression materials: polyvinyl and alginate. Most laboratories prefer a polyvinyl impression material. These materials allow the laboratory the ability to pour models multiple times. This material has a shelf life of approximately 4 to 6 months.

Setting time for polyvinyl is usually 2 1/2 to 3 1/2 minutes. Alginate is a sensitive mix formula meaning you must follow the ratio. Working and setting times are based on mixing powder with distilled or deionized water at 73°F. Setting times are usually 1 1/2 to 2 minutes.

It is imperative to load the impression tray filling the palate with the impression material. Why? The laboratory needs to see the surrounding dentition. The palate is important mainly for the provisional stents. Whether requesting siltex or coping type, this will help stabilize the stent during provisionalization.

The most common defect in study cast impressions is occlusal pulls in the posterior teeth, causing the laboratory great difficulty in properly mounting the study casts. Some of the impressions that the laboratory receives have occlusal bubbles, pulls, scrapes, and distortions.

Steps to taking an accurate impression consist of the following are:

- Fit of tray
- For alginate: using proper ratios
- Polyvinyl is premeasured
- Using cheek retractors which allow easy tray insertion and isolation
- Monitoring the mixing time, working time and setting time

Preoperative occlusal registrations must be accurate. Most laboratories prefer a face-bow transfer (Figure 1) and an anterior bite. I prefer the Denar articulator (Waterpik Technologies, Inc). Acrylic bites are preferred, but communicate to the laboratory to adjust the acrylic to a flat plane or it could break the incisal edges of the models. If using a polyvinyl, choose a rigid material.
such as Take-1 Bite (Kerr Corporation) or Regisil Rigid (Dentsply Caulk). I recommend using polyvinyl for the face-bow.

After the laboratory has received the proper preoperative materials, they will be ready to begin the mounting for the diagnostic casts. The laboratory will prepare and wax-up the case to an ideal esthetic and functional result. They can also provide a preparation guide to help in tooth reduction. This is the time to communicate the case goals to the laboratory for optimal results. Some of the goals to consider are: close diastemas, change shape, widen the buccal corridor, youthenize the smile, lengthen teeth, change shade, feminize the smile, move the midline, and tissue contour.

**Provisional Shades**

When communicating with the patient pertaining to shade of final restorations, it is always better to fabricate the provisionals close to the shade the patient has selected for their final restoration. If the patient is indecisive, always air to the lighter side. Patient perception of darker is more acute than perception of lighter. Today there are many provisional materials that mimic the shade of the restorative material. If the patient is not ready to make a final decision about the shade, tell them to think about it and call them in about 3 days. Initially the patient may feel that the provisionals are too light. It may be necessary to explain to the patient that the eye and brain are not used to seeing their image with lighter teeth. Keep in mind that it is better not to decide for the patient.

**Phonetics**

Phonetics play a major role in incisal edge position. Fs and Ss dictate the length of the anterior teeth. The provisional study model is the most vital component. The provisional model provides incisal edge position, anterior guidance, shape, and form, and helps to re-check mounted casts.

Digital photography helps introduce the patient to the laboratory by sending pictures of the patient’s full face, retracted smile, occlusal mirror pictures, preparations and provisionals with shade tab (Figure 2).

Computerized shade systems help when doing single-unit or small multiple-unit cases. Several systems are available: ShadeVision (XRite, Inc), ShadeScan (Cynovad), and ClearMatch (Smart Technology). If you do not have a shade system, include the picture of the shade tab against the adjacent tooth (Figure 3).

There are a variety of shade guides available. The most common porcelain conventional shade guides are Vita Lumin (Vita Zahnfabrik; US Distributor, Vident), Vitapan 3D-Master Shade Guide (Vident), and the Chromoskop (Ivoclar Vivadent, Inc). The Vitapan 3D-Master Shade Guide and the Chromoskop guide have bleach shades available.

When prescribing the laboratory prescription, start with identifying the patient’s name, age, sex, and teeth numbers to be restored.

Materials to include in the laboratory box are the laboratory prescription, the master impressions, occlusal registrations, an opposing model or impression, a bite stick or face-bow transfer record, preoperative study models, shade tab, stump shade, and impressions or models of the provisionals (Table 2).

Prescribing the type of restoration is important. Information such as crown, bridge, pressed

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<th>Table 1—Important Factors to Remember When Filling Out Laboratory Prescriptions for Each Restoration</th>
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Figure 2—Digital photography helps introduce the patient to the laboratory.

Figure 3—Include the picture of the shade tab against the adjacent tooth.
ceramic, stacked porcelain veneer, inlay/onlay, Maryland Bridge, partial, or denture should be precisely dictated. There are a number of materials to choose from, and if you know what material your dentist would like to use, mark or write it on the laboratory prescription.

If your dentist is not sure what material to use, request a call from the laboratory so that the technician and the dentist can discuss what is the best material for the patient.

Schedule enough time for the laboratory to manufacture high quality restorations. The time required may vary from laboratory to laboratory. Some laboratories may want to have a profile of your office to know what preferences the dentist requires.

**Conclusion**

There are many factors that can assist in good dental office/dental laboratory communication to ensure the desired results. From taking the appropriate preoperative study casts, establishing provisional shade and phonetics, to these steps are the communicators for what the laboratory really needs to know.

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