Over the last several years, taking of PVS impressions has become a necessity in progressive orthodontic practices. With the advent of several digital-based treatment planning and appliance fabrication protocols, the need for accurate impressions is key to a successful treatment result. This lesson will be a thorough review for those already taking PVS impressions and a detailed lesson for those who hope to take these impressions in the future.

To print out the notes and study guide for this presentation, please select the “Resources” link.

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The learning objectives for this lesson are:
- How to fit impression trays
- The proper technique for taking accurate PVS impressions
- How to avoid common mistakes when taking impressions
- Evaluating your impressions
- And the proper handling of impressions

Impressions are made for a variety of purposes including the fabrication of indirect bonding trays, whether made in house or sent to an outside source. They are also necessary for the fabrication of appliances such as retainers, Herbsts, and RPE’s. Impressions are also commonly taken to make initial and final study models.

In orthodontics, there are essentially two types of commonly used impression materials. Alginate is delivered in a powder form and is mixed with water to create a paste. The paste is placed into an impression tray and set into the patient’s mouth to create a mold of their arch. After the material sets up or becomes firm, the tray is removed and the impression is complete.

PVS is the other material used to take impressions in orthodontics. Unlike alginate, PVS material is typically delivered in a putty form. Another difference between the two materials is the
procedure for taking the actual impression. While alginate impressions can be taken relatively quickly and with little special training, PVS is very technique specific and includes many more steps. All of these steps as well as helpful hints for taking quality PVS impressions will be covered throughout this lesson.

Slide: 6
Impressions made from alginate are used for such things as study models, retainers, banded appliances, and acrylic appliances when minute detail is not critical. This technique can be reviewed in Academy of Orthodontic Assisting Level I in the Diagnostic Records chapter (#9). This lesson will cover impressions made PVS. PVS is used for such things as removable aligners, indirect bonding, and other procedures where extreme detail is needed.

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Many offices use alginate material for the majority of their impressions. The material generally costs much less and alginate requires a much shorter set time in the patients mouth. While the benefits of alginate material are significant, there are some cons associated with the use of this material. For one, the accuracy of an alginate impression is often less than one made from PVS. Also, alginate impression can dry and shrink causing distortions in the material. These distortions can lead to appliances that don’t fit or misdiagnosis if the impression is used to make a study model. The threat of distortion means that alginate impressions must be poured-up much more quickly than a PVS impression. Another negative of alginate over PVS is that the option of double pouring is reduced with alginate. In other words, a PVS impression can be poured-up more than once with an alginate impression is generally unusable after the first pour-up.

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PVS impression material has three important characteristics:
- Accuracy which is the ability to replicate the intraoral surface details
- Dimensional stability which is the ability to retain its absolute dimensional size over time
- Tear resistance which is the ability to resist tearing in thin sections, such as through the feather-edged material within the gingival sulcus

Slide: 9
Because of these characteristics PVS material is typically used when a more accurate impression is needed. Additionally, the stability of the impression is greatly increased with this material over those made from alginate. That is one reason that PVS is preferred if the impression will need to be sent out for fabrication as it is unlikely that it will distort or break during shipping. The stability of the material lends itself to being able to withstand multiple pours without decreased accuracy. Also, unlike alginate, there is virtually no risk of distortion allowing for an indefinite time frame between taking the impression and pour-up.
Since PVS, or Polyvinyl Siloxane (sometimes called VPS or Vinyl Polysiloxane), impressions are highly accurate, the key to proper model set-ups, indirect bracket placement, and well-fitting aligners begins with accurate PVS impressions.

Good quality PVS materials have chemicals added to them to make them hydrophilic; hydro meaning “water” or moisture and philia meaning “love.” This can be interpreted to mean that the surface of PVS material can tolerate a moist tooth surface. However, excessive moisture is not recommended for these impressions.

The basic materials needed for taking PVS impressions include:
- PVS material
- Spacer (for use with some manufacturers)
- Bite registration material
- Impression trays
- A digital timer
- Non-latex gloves

There are two basic types of PVS impression material. Monophase, also known as one phase, is a one-step material. The process for taking impressions with this type of PVS is similar to taking alginate impressions in that the material is placed in the tray and the impression is placed onto the patients arch only once.

The putty/wash material, also known as two phase PVS, is a two part system with the putty forming a base for the wash. With two phase, a material (putty) is used first to create a custom tray. It is followed by a different colored, material (wash) to capture details. Many labs feel two phase PVS products are more likely to give accurate impressions.

Not only is PVS available in one phase and two phase, but the material is also available in different viscosities. Viscosity is a term used to describe thickness, generally of liquids. Water, for example, has a very low viscosity while honey would have a high or heavy viscosity.

Other characteristics that must be taken into consideration when selecting a PVS material include:
- Regular- vs. fast-setting
- Hand-mixing vs. auto-mixing
- Fragrance vs. no fragrance
- Taste vs. no taste

Slide: 16
There are two basic types of impression trays used for PVS impressions: metal reusable trays and plastic disposable trays. Each has many brands, types, and sizes available.

Slide: 17
There are pros and cons to both metal and plastic disposable impression trays. Take these into account when choosing the type to use for each application. Some offices use a combination of types depending on the type of impression or if it is being sent out.

Slide: 18
Metal trays can be used if the impression is staying in-house for pour-up. The initial cost of inventory can be significant and the cleaning and sterilizing process can sometimes make the use of metal trays even less cost effective. Additionally, metal trays can be difficult to adapt to specific patient anatomy. Rim lock trays that have no perforations (small holes throughout the tray) will not work as there is only retention at the edges and it is ideal to have it all over the tray.

Slide: 19
The use of plastic, single use impression trays can be a cost effective solution as well as a necessity for impressions that are sent out for digital study models or indirect bonding tray fabrication. These are single use items and cannot be sterilized or disinfected for reuse. No matter which type of tray you use, it is imperative that it have retentive features such as perforations or undercuts.

Slide: 20
For many applications, a bite registration is needed with the impressions. This allows the lab to duplicate how the upper and lower teeth fit together. Please note that bite registration is used with both alginate and PVS impressions in some cases.

Slide: 21
A bite registration can be taken with either a wax sheet that has been warmed or a fast-set PVS material. If the impressions are to be shipped, a PVS bite registration will need to be used since wax is likely to distort or even melt during shipping.

Slide: 22
It is recommended to take a bite registration prior to taking the impressions. There are a few reasons for this. First, it gets the patient used to having something in their mouth and allowing it to set. Additionally, the bite registration can help to confirm your tray size selection so that numerous trays do not have to be tried in the patient’s mouth. Also, if you routinely take the
bite registration before the impressions, you will be sure not to forget it.

It is almost as critical to have an accurate bite registration as it is to have an accurate impression. Have the patient practice biting in the proper occlusion prior to actually taking the bite registration. The clinician may need to instruct the patient in order to get an accurate registration.

Slide: 23
A fast-setting PVS product creates a very accurate and stable bite registration. This is supplied in a cartridge system in which two components are mixed to form a compound that sets over a short period of time. After setting, the material is rigid but somewhat pliable. The resulting registration is considered to be more accurate and more stable than wax. Follow the manufacturer's instructions for loading the cartridge in the dispenser. A new plastic tip is used in the dispenser for each patient. It is within the tip that the mixing of the material actually happens. The steps for taking a PVS bite registration are as follows.

Slide: 24
Insert the plastic tip into the syringe. These tips are single use and will need to be changed between patients.

Slide: 25
Start your timer and begin mixing. To begin mixing, squeeze the dispenser trigger using moderate pressure. Dispense a small amount onto your tray cover or into a tissue so that you can tell it is well mixed. You can tell because the two colored components will combine to form a uniform color. When you stop squeezing, the material will stop flowing.

Slide: 26
Inject the material onto the patient’s teeth. Beginning on the most distal molar on the left side of the mouth, dispense the material onto the occlusal surfaces of the teeth. It should be about 5 mm thick. You have roughly 30 seconds to place the material from the left molars around to the right molars.

A couple of helpful hints are:
If your registrations are consistently too thin across the front teeth causing them to break, a little material can also be placed on the maxillary incisors. It will combine with the material placed on the mandibular arch to create the needed thickness and detail.

If the patient is class II (2), place enough material on the facial aspect of the lower anterior teeth to capture registration of the upper anterior teeth. If the patient is class III (3), place enough material on the lingual aspect of the lower anterior teeth to capture registration of the upper anterior teeth.
Next, ask the patient to bite into the material until the teeth barely touch. While the patient is doing so, it is important that you keep gentle pressure on the chin to assure that they are biting in the proper position. Allow the material to set for the time prescribed by the manufacturer. This typically happens in less than 30 seconds so it is important that you work quickly.

Remove the material from the patient’s mouth by first asking the patient to open their mouth. Next, lift the material off of the teeth with your gloved fingers or an instrument such as a scaler.

Once the bite registration is removed, rinse it off with cool water. You should then inspect the registration for consistency. Weak spots or missed teeth can cause problems and indicate that the registration should be retaken. Once you are sure that you have a quality bite registration, disinfect it and place it in a zip-lock bag. Once the impressions are taken they will be placed into this same bag.

It is always a good idea to write the patient’s initials or other identifying information on the bite registration. This can be done with a permanent marker.

Wax for bite registrations may be supplied pre-formed in the shape of the dental arch. It is available in different colors depending on the manufacturer. Yellow, brown, and blue are common. Sometimes a bite registration may need to be made from a plain piece of base plate wax. It depends on the doctor’s preference. Practice placing the patient into the correct occlusion (bite) prior to heating the wax. Once you have confirmed correct occlusion, heat the wax sheet until soft.

Wax wafers need to be softened by placing them in warm water first. This can be done using a “warm water bath,” which is a commercially available piece of equipment that maintains water at a constant warm temperature. Wax is placed therein and removed when needed for patients. The disadvantage of a water bath is cleanliness. Keeping it clean, changing the water, and the high potential for cross-contamination are reasons enough to consider using a much simpler method.

A simpler, cleaner, and less expensive way to soften wax for a bite registration is to simply hold it under running warm tap water or place it in a mixing bowl filled with warm water.
The preformed pieces of wax may also be supplied with a piece of foil sandwiched between two layers of wax. This is to help disperse warmth and soften the wax more quickly. As you can see here, they can also be shaped to match the patient’s arch width.

Base plate wax can be folded in half after being softened and then cut with a spatula to the correct size.

Standing behind the patient’s shoulder, insert the wax into the patient’s mouth and press it firmly against his/her maxillary teeth.

Have the patient close down on the wax. Ask him/her to bite or gently guide them into the desired position.

After the wax has cooled, it can be removed from the mouth. If you have compressed air at the chair, blow it over the wax with the patient biting together. Then, while holding the wax against the maxillary teeth, have the patient open so it is no longer touching the mandibular teeth. Remove the wax from the maxillary teeth. If you do not have access to compressed air, you will need to let it sit a bit longer until it begins to harden. Cooling the wax before you remove it will help prevent distortion.

There are several key points to help make quality PVS impressions. A lot of them come in the preparation of the patient as well as the clinician who will be performing the task. These may seem like small things, but they are very important.

After seating the patient and placing a napkin on their chest, it is important to prepare them for what is about to happen. In order to help get a great impression on the first try, there are a few things you can do to prepare the patient. This includes having the patient remove any lipstick, gloss, Vaseline, or lip balm. These products may interfere with the setting of the PVS. Then have them brush their teeth if they have not brushed since the last time they ate. As with any new procedure, you should also tell the patient what to expect and the length of time that the trays will be in their mouth.

Be sure to describe the impressions and the process to the patient. You may also want to share with them that their resulting pour-ups will be evaluated under magnification and digitally scanned to develop their treatment. It is also a good idea to stress how important accuracy is. Mention that in rare occasions some imperfections cannot be seen with the naked eye and that
you will notify the patient if either impression needs to be retaken.

TIP: A great hint for beginners is to just go ahead and take two impressions of each arch and if you are not sure which is best, send them both to the lab.

Slide: 42
Before taking impressions, be sure to check around the mouth for bridges or other significant undercuts. If needed, there is block out material you can use to prevent your impression from being stuck in the mouth. If done carefully, you can even use wax.

Slide: 43
If necessary, trays can be modified. They can be cut with a slow speed handpiece for areas interfering with gums. If the tray is the right width, but not long enough to capture the last molar, it can be extended by adding PVS quick set material to the rear of the tray. Plastic trays can also be modified by heating them over a Bunsen burner to change their shape in order to capture all teeth.

Slide: 44
PVS material can tolerate a moist tooth surface, but not excessive moisture. This property also allows for stone to adapt to the details of the impression when pouring it up. The downside of being hydrophilic is that it cannot displace excess saliva. Since saliva tends to be ropey, it is beneficial to get it out of the mouth prior to taking the impression.

Hint: There is no need for blowing the teeth off, but it is wise to wipe them with a cotton roll to remove excess moisture and have the patient rinse out with a small amount of mouthwash, followed by water, to remove ropey saliva.

Slide: 45
It has been reported that some brands of latex gloves can interfere with the PVS material setting properly. Some powder-free brands have proven to work fine, but to be safe it is recommended to use non-latex gloves when working with PVS impressions. If you are unsure if your gloves may be a problem, try putting a small mixture of the material on the gloves you stock in your office to be sure they will not be a hindrance. Also, the oils from your skin can be a problem as well so be careful not to touch the impression surface of the material with ungloved hands even after the material has set.

Slide: 46
You cannot know if the material is fully set just by touching it. Use a digital timer, set to the manufacturer’s recommendations, to accurately time the setting of the material and ensure that the material is fully set prior to removing it from the patient’s mouth.

Slide: 47
Selecting the correct impression tray is critical to getting an excellent impression on the first attempt. Trays come in a variety of sizes. By glancing into the patient’s mouth, you can
estimate the proper size tray and then try it in the mouth. Confirm the length of the tray by checking that the tray covers the posterior of the last tooth on each side of the arch while allowing for a small space between the facial surface of the anterior teeth and the tray. Confirm width of the tray by checking that it does not rub on the facial aspect of the molars.

Slide: 48
Taking a bite registration prior to taking an impression can help determine the proper tray size. Trying the tray in the patient’s mouth will confirm if this is the proper size. Confirm they tray extends past the last tooth in the arch and does not rub on the facial surface of any teeth.

Slide: 49
Prior to taking any impression, the clinician should check to make sure all plaque and debris is removed by patient brushing. If there is tartar build-up on any teeth (typically facial on molars and lingual on lower anterior teeth) this should be removed prior to taking the impression. Pumicing the molars will help increase the accuracy of the impression.

Slide: 50
In preparing for showing how to take a PVS impression, this is an example of an excellent impression that could be used for any application.

Slide: 51
We are now going to review a method for taking PVS impressions which has proven over and over again to be easy for anyone to learn and give fairly consistent results. This technique is done in a single visit.

Slide: 52
First let’s discuss the materials needed for the technique. It includes plastic trays and PVS putty material dispensed in tubes or tubs with a part A and a part B. When these two parts of combined, a chemical reaction takes place that will allow the material to set-up or become firm.

The PVS wash material is best dispensed from an auto mixing cartridge. The key to this technique is a soft foam or plastic spacer with a thickness. You can purchase these pre-formed or make them yourself from 1/32 inch closed-cell polyethylene foam. Some companies suggest even using a square of Saran Wrap. You also need to have on hand some cotton rolls for wiping away excessive moisture, gloves, and a cloth or paper towel for the patient to catch any drooling.

Slide: 53
We will now move through the steps for taking a very accurate PVS impression using the technique promoted by Dr. Steve Tracy.

Slide: 54
Take a dollop or scoop from each of the two different putty containers and start your timer. These should be equal amounts of material. Keep each scoop with correct color putty – do not interchange the scoops.
Slide: 55
Mix the two scoops of material together by hand until a consistent color is achieved. Kneading it like bread dough works well.

Slide: 56
Form a roll like a small hotdog or cylinder. To do so, roll the material between your palms with the hands flattened.

Slide: 57
Place the rolled material into the tray and, using your gloved finger, begin to form a small arch-shaped trough for the light wash material with your finger tip. Make sure to push the putty all the way into the tray so it is locked into the perforations.

Slide: 58
Place the spacer into the putty and press firmly to deepen the trough. The spacer serves two very important purposes. First, it creates a gap that allows the wash to fill to achieve the extreme detail desired of a PVS impression. Second, it prevents saliva contamination of the heavy body putty before the light body can be applied.

Slide: 59
Seat the tray in the mouth being sure to follow the long axis of the teeth and moving the lips and tongue how you normally would for an alginate impression. In other words, for a maxillary impression take the hand that is not holding the tray and pull the upper lip out and down. For the mandibular impression, have the patient lift and stick out their tongue and pull the lower lip out and up to help create a roll in the impression.

Slide: 60
Remove the tray and check it. What you are looking for is that it captures the back of the second molars and that there are no large voids.

Slide: 61
Check that the putty is set by touching the edges of the material and then remove the spacer with your fingers. Be careful not to take the spacer off too early as the PVS may stick to the spacer and can rip as you see here. If there is more putty than you need, it will more likely just carry wash material towards the throat making the patient uncomfortable. It can easily be trimmed away with a sharp blade. The resulting impression is actually a custom tray made just for the patient.

Slide: 62
Next, prepare the wash material by placing a disposable tip onto the syringe that mixes the material as you squeeze the trigger. Like with the PVS bite registration, dispense a bit of the material onto a paper towel or tray cover to make sure it is well mixed and to eject air from the tip. Start the digital timer.
Next, insert the tip of the gun into the molar region on one end of the tray and work your way around the arch. As you move around, be sure to keep the tip in the wash. If you take it in and out it incorporates air which will result in bubbles. It is really only necessary to fill the tooth trough. Don’t worry about the palatal region of upper impressions unless the technique you are using requires it.

Proper loading of the impression tray will reduce the introduction of bubbles into the material.

Place the tray with the material into the patient’s mouth with hand pressure until it comes to a stop. Again, to ensure a good capture of the vestibular roll, pull the upper lip out and down and the lower lip out and up.

After the recommended time has elapsed and the material has set, release the suction by running your finger under the lip and gently rock the tray until it comes out of the mouth.

Once the tray has been removed from the patient’s mouth, look at it under good lighting to inspect for imperfections. The characteristics you are looking for will be covered in later slides.

If, after careful inspection, problems are detected that would affect the quality of the resulting product, do not hesitate to retake the impression. If you are unsure, you can always send two impressions for each arch and let the lab pick the best one.

This video demonstrates taking PVS impressions with PlanetSmiles.com material.

Because different manufacturers have different recommendations and doctors have varying preferences, the following few slides show some other methods for making PVS impressions that have been shown to be effective.

In this method, a custom tray is fabricated by seating the heavy body material over the patient’s study model. This saves chair time as it is done before the patient arrives. A layer of plastic wrap placed between the putty and model helps to eliminate contamination from the model. With this method, the impression can be removed before the heavy body material is fully set and the resulting trough can be modified as needed with a finger. Obviously, this requires an extra appointment since a study model must be poured-up beforehand. As a result, this method can delay treatment.
In this method, the putty material is pushed all the way into the tray with the gloved hand to form a trough in the shape of the arch. Obviously, this does not make a custom tray like the previous two methods, so the wash material will not be as evenly distributed across the impression.

With one phase PVS, material (generally of medium viscosity) is placed in the tray and then an impression of the patient’s arch is taken. If a small amount of the bite registration material is placed on the distal aspect of the trough, it helps keep the PVS contained in the tray and assists in capturing the distal surface of the molars.

In order to emphasize some main points, you will now review key aspects of seating trays in the patient’s mouth while taking PVS impressions. These techniques apply to any viscosity of PVS material including heavy body putty, medium body one phase, and light body wash.

Place the trays with PVS material into the patient’s mouth using the same technique used in the fitting process. It is also similar to taking alginate impressions with some exceptions. For example, when taking PVS impressions have the patient rest their head on the head rest to allow the clinician to apply the necessary pressure as PVS is thicker and harder to seat than alginate.

Stand behind and to the side of the patient in roughly the 11 o’clock position. For right handed assistants, retract the left cheek with your left hand and retract the right cheek with the tray in your right hand as you roll it into the mouth.

For the upper impression, align the center of the tray with the patient’s midline using the nose as a guideline. Push the tray up with your right hand as you hold the lip out with your left hand and roll it over the impression material. Seat the tray with a flat motion following the long axis of the teeth. Keep steady, equal pressure on the tray until fully set following the time required by the manufacturer.

To insert the lower tray, stand beside and in front of the patient in roughly the 8 o’clock position. Right handed assistants should retract the right cheek with their left hand and retract the left cheek with the tray in the right hand as it is rolled into the mouth.

For the lower impression, once again align the center of the tray with the patient’s midline using the nose as a guideline. Begin pushing the tray downward with your right hand. Ask the patient...
to stick the tongue out and hold it there. Then seat the tray the remainder of the way as you pull the lip out and around the material to achieve a roll or impression of the labial vestibule. Seat the tray with a flat motion following the long axis of the teeth. Keep steady, equal pressure on the tray until fully set following the time required by the manufacturer.

Slide: 80
After the recommended time has elapsed and the material has set, release the suction by running your finger around under the lip and gently lift the tray until it comes out of the mouth. Do not use a rocking motion to release the tray.

Slide: 81
Proper disinfection of the impression and bite registration must be done prior to wrapping and pouring. Rinse the impression well to remove any saliva, blood or debris. Spray or dip the impression with a low alcohol content solution. The impression should be allowed to sit for the recommended time prior to pouring or shipping. Use of a hydrogen peroxide based disinfecting solution will decrease the possibility of any distortion due to alcohol.

Slide: 82
The following are some common mistakes to avoid when taking an impression:

- Teeth hitting the tray
- Smearing of PVS material
- Impression not deep enough
- Bubbles in the impression
- Missing the distal aspect of the molars
- Impression pulling away from the tray
- Thin incisal edges

Correct tray size will decrease the possibility of these happening. Thin incisal edges and double impressions are often caused by not following manufacturers’ specifications for set time.

Slide: 83
The clinician should inspect the impression very carefully to detect any defects.

Slide: 84
Good lighting is essential for an accurate inspection. Tilt the impression to inspect it from all angles as shadowing can hide imperfections. It can be very helpful to use loops for the final inspection.

The following slides will provide you with a checklist of things to inspect when looking over the impressions.

Slide: 85
First is the gingival margins. Follow each margin of each tooth, going around the entire arch on both the buccal and lingual aspects. All margins should be intact and appear crisp and clean.
Look for any voids or drag marks. These drag marks are most common on the lingual surface of the molars. Be sure that the impression captures at least 2 mm of gingival tissue beyond the gingival margin.

Slide: 86
Next check all the occlusal surfaces and incisal edges. This includes both the cusp tips and occlusal grooves. Be sure that they show clearly and are not deformed in any way. A very tiny amount of tray showing through on the cusps or incisal edges is acceptable but should be avoided.

Slide: 87
Look carefully at the molar region to be sure you have captured the distal aspect of the last tooth in each arch (typically the second molars) and that the facial surface is not in contact with the tray.

Missing the second molars can be prevented by either using a longer tray or extending the tray using PVS bite registration material. It can also be caused by not having enough material in the rear portion of the tray. In the photo, notice how the buccal roll in that area is deficient as well. You also notice that this is a single phase impression material since it is only one color. If a two stage impression was used, these problems could have been avoided.

Slide: 88
Look at the edges of the impression material itself to make sure that it has not pulled away from the tray in any area. If it has pulled away, it is likely that the resulting teeth will be distorted and look a little smaller. It is also important to be sure that the light body material or wash adheres to the heavy body material. Where ever you see the two materials come together look for any separation.

If the two materials do not adhere to each other it could be due to a couple of things. First, the timing is could be “off.” The wash impression should be taken shortly after the putty impression. Secondly, it could have been contaminated with saliva, gloves, or finger oils.

This picture also shows a double imprint of the second molars which means the impression was moved after it began to set. That may also be why the wash material pulled away.

Slide: 89
Once you have gone over all these details, look at the overall appearance of the material. For example, are there any folds or wrinkles? If there are, are they anywhere near the teeth imprints. If it is in the palate or near the buccal roll, it should not be a problem. Is there a double imprint? This indicates that the impression might have been moved before it was set. At this point we need to mention that it is important to never try to reline a PVS impression by adding a bit more wash and re-seating it. This will always create a poor impression. It is best to just start over and take a new impression.
Lastly, look tooth to tooth. In the tooth surfaces, look for extremely thin walls where you can see the tray through the impression material as well as good anatomy of all occlusal, facial, and lingual anatomy. Extremely small bubbles are acceptable as they can be removed at the lab and do not compromise the tooth anatomy. Large bubbles or voids make the impression inaccurate. Lastly, look at the gingival areas of all teeth.

Though meeting all of the criteria is ideal, in reality we must consider the patient’s comfort, staying on schedule, and the cost of materials. When is a retake necessary? Does the impression have to meet all of these criteria down to the minutest detail? Although we should always strive for perfection in our impression taking, excellence is more realistic. Your doctor and the lab will let you know what is acceptable or not. Remember, the intended purpose for the impressions will help dictate what level and types of minor imperfections might be acceptable to your doctor or the lab. For example, if the intended use of the impression is to fabricate a tray for indirect bonding of lingual brackets, it is imperative that the lingual surfaces and lingual gingival margins of all teeth be essentially flawless. A small drag or bubble on the facial surface is likely inconsequential in this instance and may therefore be acceptable.

It is important to realize that any mistakes in the impression are expressed in reverse on the model. Unfortunately, by the time the model is poured up, it is often too late since the patient has already left.

Bubbles in an impression can result in this type of model imperfection. To help prevent this, make sure the proper loading technique of the light wash material is used. Also, make sure to pull the lip out during seating of the tray to help reduce the possibility of capturing air bubbles.

A proper fitting tray will allow capturing the posterior of the last tooth in the arch and ensure full registration of the molars.

Here you can see that part of the molar is not clearly defined. This can be from not using enough material.

Improper application of the wash in a PVS impression can result in this type of model imperfection. To help prevent this, make sure that the proper loading technique of the light wash material is used.
Slide: 97
If the impression material pulls away from the impression tray it can result in teeth that are too thin on the model and therefore not accurate.

Slide: 98
Movement of the impression tray after it is initially seated can result in a type of model imperfection where the teeth essentially have double edges.

Slide: 99
Using the proper amount of impression material will decrease the chance that the model will have these imperfections. Make certain that the putty covers the posterior tooth in the arch and that the light wash fills the trough 2/3 of the way full.

Slide: 100
If the tray is not fully seated when placed, it can result in this type of model imperfection. Having the patient rest his/her head on the head rest will allow the clinician to apply the proper amount of pressure to fully seat the impression tray.

Slide: 101
In conclusion, PVS impressions are an important part of progressive orthodontic treatment. Assistants who can successfully take impressions with this material will be a valued part of the team.