

Chapter 16

SET UP OF PORTABLE DENTAL CLINIC

If you have done your homework about what is available on the work site and have packed accordingly, then things should go pretty smoothly. There are always going to be things you did not foresee, but they should be minor and not affect your production. If you started your paperwork soon enough, then you should have your passport, work permit and approval for importing medicine and equipment. **BE PREPARED** for the paperwork process to take months in some countries before your trip. With those authorizations, you can clear customs without having your equipment put in "detention" or your medicines "confiscated". You can buy or write prescriptions normally and be afforded the courtesy of any other practitioner in that country. Some countries require a national dental person to work with you or on your team. It may be a casual drop by for a few hours or they may work with you side by side every day. Each country is different in their attitude and approach to outsiders practicing on their people. Remember, it is their country and they are in charge. Please do not go into another country with the attitude that you "know it all" and will "do it your way." You may not be invited back. **HAVE A GOOD ATTITUDE** and work within the parameters you are afforded. **BE FLEXIBLE.**

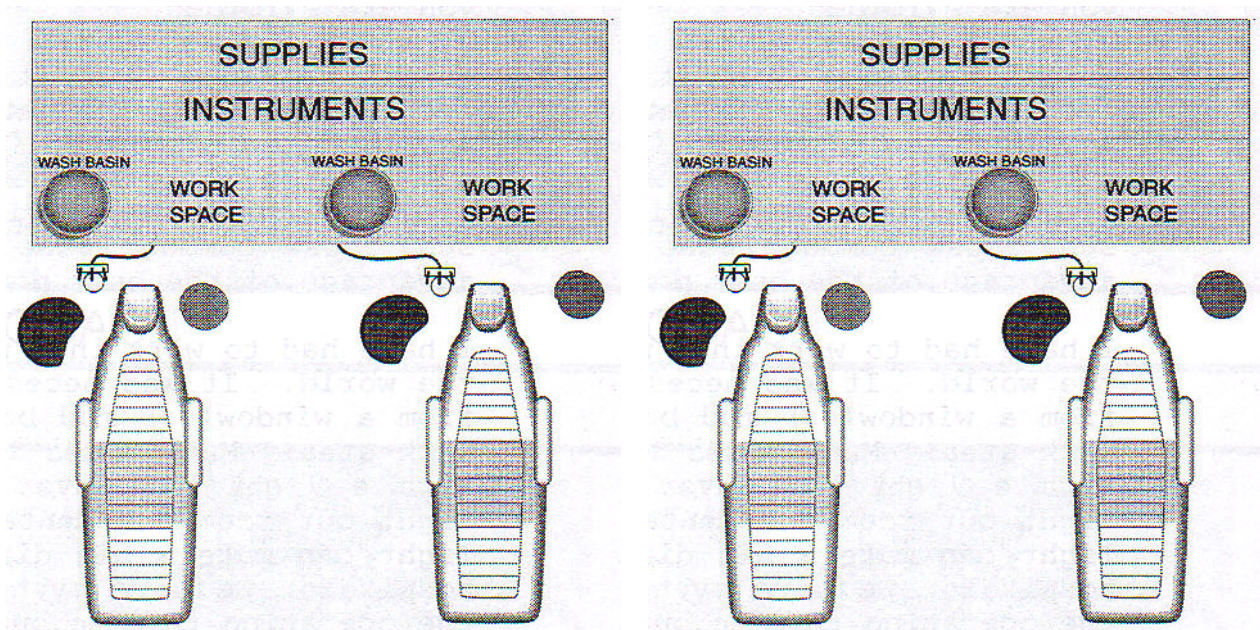
The [first thing](#) to look for when setting up your dental chair is good light. Whether you have brought your own light or have a light available on site, set up your chair so that light is available for the patient's mouth. It is possible to have too much light if you are in a window or doorway and in direct line with the morning or evening sun. Use common sense when placing your dental chair to take advantage of the best possible lighting for your work area.

I have had to work in a wide variety of lighting situations around the world. It was necessary to remove several panels of tin roof from a windowless mud building in Ecuador, to let light into our work area. Many times in Mexico, we have swung an extension cord with a light bulb over the work area in concrete buildings to light our room and dental chair. A small portable clamp-on work light can make a big difference where there is little light. In hospitals, we have even moved large mobile surgical lights from the operating room to our dental chair. Yet we still always carry several good flashlights, which take 2 D-cells and work for days without needing new batteries. Good lighting is necessary for dentistry.

There are dentists who take hunter's 6-volt head lamps, expensive tripod portable dental lights, Goodlights, penlights, automotive headlights, etc. The point is, there are many, many ways of obtaining good light. Use something that you are comfortable using and can see with.

The second thing I look for are tables on which to spread all of my hand instruments and supplies. I hate to dig around through bags of instruments when I need something, particularly if my hands are gloved. Spread your instruments and supplies on a table centrally located or behind your work area, depending on the number of chairs being used. If only one or two chairs are set up, I place it directly behind the chairs with walk space around it (that may also depend on the size of the room). Try to set your portable autoclave on a separate table to wash and sterilize instruments. It is even better to have the heat sterilization in another room if you are in a hot country with no air conditioning. Or, keep it in your operating room for warmth if in a cold climate and need another source of heat.

In a situation where you may need four or six dental chairs, placing the table in the center of the chairs works well, or even two tables with walk space between is fine.



Simple multiple chair arrangement for portable dentistry.

I keep a wash basin on the corners of the table where my gloves and masks are located. A towel can be put under the basin and left hanging off the side or paper towels can be used. Paper towels are best, but may not be available. Supplies should be in the center of the table or to the rear of your workspace. Hand instruments should be between the supplies and workspace. Your workspaces should have disposable paper underneath which can be thrown away after each patient or as it is contaminated by the instruments. A washable surface for workspace is okay if you have good hospital-approved disinfectant. Instrument mats and trays are also good because they can be sterilized and used over and over. Good sterile technique is just as important here as in your office. In some cases it could be more important to **Be Prepared**.

Keep work areas separated for each patient so there is no crossover of contaminated instruments. Always know which work area goes with each patient. Then keep their syringes, hand instruments, and supplies on that workspace. Supplies and instruments can be selected and moved forward into the work area on the front of the table, as you need them.

In some clinics, you may find yourself with an abundance of room and plenty of table space to work with. Use your imagination for the greatest productivity and light utilization. But if you are more comfortable using side delivery and mixing all of your own materials, possibly another arrangement would suit you. Arranging good work surfaces and having everything where you can get to it easily, makes your portable dental set up efficient.

The [third thing](#) is to visualize the arrangement of your equipment (generator, compressor, drill unit, x-ray) in relation to your power source. This will maximize workspace, noise reduction, and convenience. Any room can be set up a dozen different ways to work efficiently. Keep in mind the need for walkways for yourself and those who help you. Air lines, power cords, water lines, and breaker boxes should be kept out of people's way and taped to the floor with duct tape.

A [fourth thing](#), which may or may not be a factor for your specific operatory set-up, is patient flow or crowd control. It has always been necessary to have a controlled flow of patients in most of the clinics where I have worked. The curiosity of what we are doing draws lots of people and then, of course, the many individuals who need dental services. It is best to have a solid wall, fence, building, or vehicle barrier to keep the crowds out of your work area. Human nature causes people to want to crowd into your work area and see what is going on. I have set up under trees, in the open with only table and chairs, on porches, along the river in grass huts, many varied places. Yet, there is always need for crowd control when any number of people start gathering to watch. Normally people do not mean to get in the way, but natural curiosity will draw them in close to watch. Maybe they have never seen a person with different colored skin, eyes, or hair such as yours if in a different culture altogether.

If we plan to work on large numbers of people, crowd control after a few days of clinic is absolutely necessary because the crowds get increasingly larger. We have had clinics in South America where 600 to 800 people would be waiting in line at the door the first day and each day the line grew longer. That last day, you can feel the tension and their desperation as the day wears on. They begin to realize that they may not get into the clinic to be seen. They may have walked from miles away and spent the night near the door in line to be in a position to be seen by the next day. On more than one occasion, the situation on the last day has gotten out of hand. The local police or military had to be called to control the crowds for the safety of those who were waiting in line and

of the team who was working so desperately hard to see as many people as possible.

There are such unbelievable needs in these third world countries. People will come for miles by foot or canoe to get to an American dentist or physician and will camp for days in line to be seen. You cannot appreciate the need for dental care in these countries until you actually go, work, see and feel the desperation for help. It will give you a greater appreciation of the skills you have to help others. That should be the reason you are in the health care profession.

If you are going to a clinic, hospital, or university to work, crowd control should not be a problem. But if you are going to a rural area to work in an auditorium, schoolhouse, church, or government building, crowd control and patient flow should be a consideration before your first patient is seen. We like to have one entry door to bottleneck and control people entering the waiting area for treatment. It is best to have a separate exit door for patients to leave from, so they don't have to push through the crowds at the entry door. Patients should not have to face the crowds standing in front of the clinic building especially if they are self-conscious or bleeding. Children will especially become apprehensive if they see your patients leaving, spitting blood and holding their mouths.

Many times, we carry white bed sheets and wire in order to partition a large room into several or many small rooms. The center of your floor space can be used as a waiting area with the small rooms made of sheets around the perimeter for each dentist, physician, examiner, or nurse. Then you may draw from the waiting area into the adjacent cubicles. We usually keep waiting patients separated as to their respective needs for dental or medical care. This way, the dental assistant can quickly tell me how many patients are screened and waiting. You can control patient flow better by letting a few into the waiting area at a time. It is much easier to close down for noon and at the end of the day by letting just enough patients in to fill the available time.

Time varies from patient to patient; depending upon how sophisticated your treatment. Each person must work at his or her own comfortable pace. Good crowd control and patient flow keeps stress down to a minimum. You must do the best you can with what you have and hope to see the end of the line each day.

This section on set up and operation may not fit your needs for every place you must practice portable dentistry. Nothing is locked in concrete about how you should practice portable dentistry or what tools you may prefer to practice your profession. Each dentist practices his own way, at his own speed, and with his own equipment preferences. We dentists tend to differ vastly on which burs we use for preps and which ones to finish restorations. So, do not expect to follow each detail of this book for your own specific trip. Modify the things you see and like, to suit your own needs. This is meant as a guide for you to think your way through the

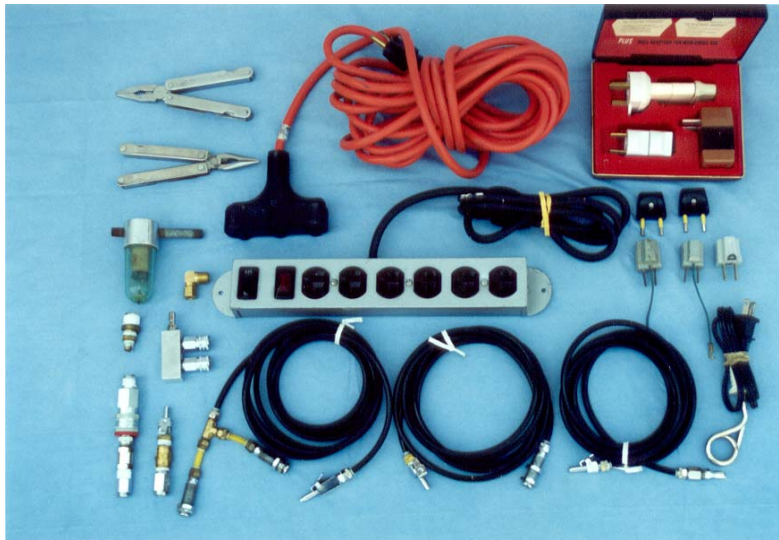
preparation for a trip. It may be good to go with some teams before winging it alone. It would help sharpen your perspective before doing it by yourself. So, I would highly suggest going with someone else a few times. I did.

Some Considerations in General Set-Up:

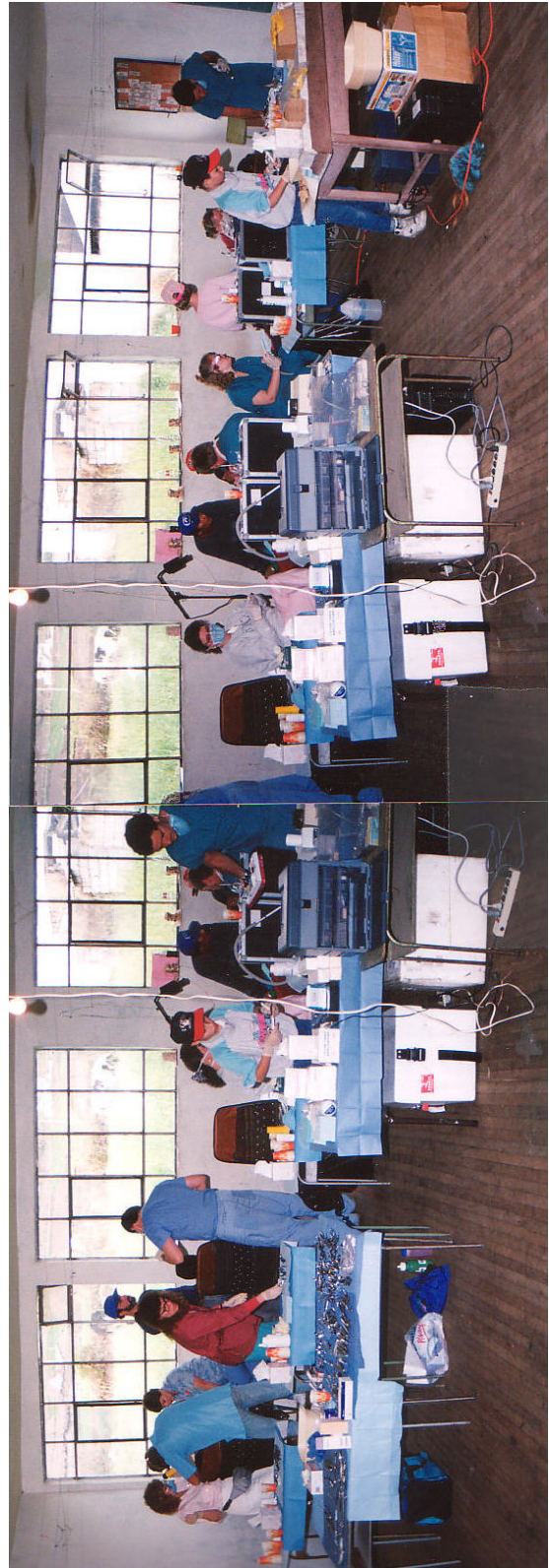
1. Place your generator outside of the building or in another room to reduce noise. Use a heavy 12 or 14-gauge extension cord to run power through a window or door to your dental equipment. A 16-gauge extension cord may get hot and burn up if running several plugs a long distance of more than 50 feet.
2. Place your portable compressor close or within reaching distance if the electric power is low or undependable. It may be necessary to turn it off quickly to prevent overheating. Either the breaker box or compressor heat switch should automatically shut it off to protect your compressor. If your compressor stops due to overheating, then you will have to be able to manually switch it back on after it cools down.
3. Try to use a circuit breaker box with six plugs to protect your equipment. All of your equipment should plug into the breaker box to prevent overload. Low voltage and current fluctuation can ruin equipment, such as a compressor. We have seen that happen many times.
4. Always carry the necessary 2 or 3 prong adapters for the electric source of that country. Even countries with 110V may have the old style two-prong plugs, which your new U.S.A. three-prong plug with ground cannot go into. I carry one for my circuit breaker box, so it can plug into the old style 110V, and then my entire grounded U.S.A. 110v three prong can go into the circuit breaker receptacles.
5. If you are going to use someone else's compressor, consider an in-line air filter to keep water, oil, and rust flakes out of your air lines. Naturally, water collects in compressor tanks and should be drained regularly. That water will eventually rust the tank. A small piece of that rust can come through the air line and ruin a handpiece if you do not have an air filter on the compressor air line.
6. Extra air line extensions can be handy if your electric power to the compressor is reliable. Snap the air line extension into the air line and move the compressor further away from you to reduce noise. Also, you can put T-connectors in the air line with extensions to use an air drive amalgamator or second drill unit. I have put as many as five portable drill units on one compressor.

7. A pressure pot autoclave can sterilize instruments and be used over an electric, gas, propane, butane, or wood source of heat. It is also possible to utilize boiling water for (20 minutes), or a dry heat oven (1 hour). Liquid gluteraldehyde sterilants are not as effective as heat and pressure, but better than nothing when there is nothing else available.
8. A high-speed handpiece with thumb bur release button is helpful. You don't have to chase a bur-changing tool all day long or worse yet, lose it! I had to use the same 557 bur in a high-speed drill for five days on one trip to Mexico because we lost the bur changer the first day.
9. A low speed drill with contra angle latch, friction, and prophyl cup attachments is a must for restorative and preventive techniques regardless of where you are practicing full service dentistry.
10. The visible light cure unit needs a good 110v power source to produce adequate light for restorative and sealants. Low electric current affects the intensity output of your curing light. Check your cure light output before going on a trip. It should register at least 300 on the meter. One with removable tips for sterilization is convenient or take a bag of plastic disposable sleeves. Don't forget the UV amber glasses or light shield to protect your eyes.
11. An air or electric triturator is necessary if you plan to place silver restorations. In the jungle, a mortar and pestle will work to mix silver alloys by hand, but it takes more time. Note, some Eastern European countries do not permit alloy restorations.
12. An air-driven (air sonic) or efficient electric scaler (cavitron) can save you much time cleaning heavy calculus off teeth. We have seen calculus so heavy that it looked like one tooth in the mouth from ear to ear. It takes a high-speed handpiece to slab through this kind of calculus before you can start with a sonic scaler.
13. A portable x-ray unit and x-ray developing system are optional. Remember you need a good constant grounded current to operate the cathode ray tube efficiently. Be sure it has a base that will not tip over easily or be in the way. Check the size and weight of the portable unit before buying one. Mobile x-rays are not necessarily portable or easily transported on an airplane. The airline industry has weight and size restrictions for travel.
14. Sometimes a pulp tester would be helpful especially if you do not have a portable x-ray. Be sure to check the battery before leaving on a trip. They are hard to find in another country.

15. Packing along a comfortable operator's stool is really an option. Normally you can find an adjustable chair, which will serve you nicely, without packing one along. Even a three-legged stool can work in a rural area for sit-down dentistry. It depends on your style and a little upon your age! Any more, I need something padded.

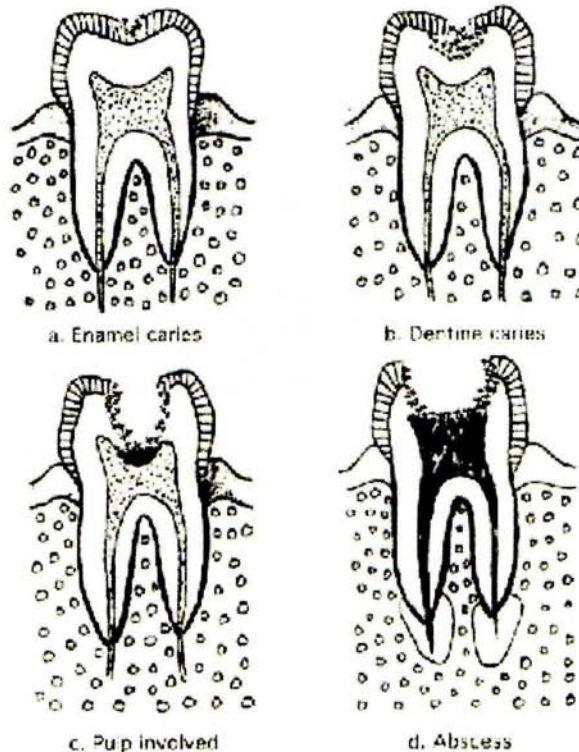


Electric adaptors and air line quick disconnect adaptors.



The development stages of dental caries from the ART Manual

- a. Enamel caries: No pain
- b. Dentine caries: maybe sensitive to hot, cold and sweet foods/drinks and eating hard things; there may be pain
- c. Pulp involved: severe continuous or throbbing pain
- d. Abscess: deep acute pain which may disappear after a while.



Progression and Complications in the Primary Dentition

The progression of caries in primary teeth is very similar to its development in permanent enamel and dentine are thinner. Caries in primary teeth, therefore, progresses much faster into dentine and thereafter the pulp than in permanent teeth. While some people consider that decayed primary teeth do not matter because they are replaced by permanent teeth, it must be remembered that:

- decay in primary teeth can be very painful
- the experience of an extraction is very threatening for a small child
- the developing permanent teeth can be damaged by abscesses around the roots of primary teeth, and
- the eventual position of the permanent teeth can be disturbed if the primary teeth are extracted early

Thus, caries in primary teeth needs to be prevented and treated.

Preventing and Controlling Dental Caries

Caries can be prevented by the following 3 activities together:

- ✓ by removing plaque completely, carefully and effectively at least once a day
- ✓ by restricting the frequency of eating and drinking sugary foods and drinks
- ✓ by increasing the defense of the enamel, for example by using fluorides in toothpastes or mouthrinses