

TeamSmile Operations Manual

X-Ray Area

Purpose: To confirm the dentist's diagnosis from patient exam. Patients will then be directed to appropriate designated area.

Total Volunteer Needed:

Dental Volunteers: 8 in x-ray capturing

Dental Student Volunteers: 8 in processing

Acteon Volunteers: 1

General Volunteers: 3

X-Ray Area Inventory

Items located in X-ray Crate 1 & 2

Item Location

Lead Vests – 3 children, 2 adult, 2 operator	Education Crate
NOMAD Pro (4) w/ 8 Batteries Manuals: Training, NOMAD, Dosimeter	Crate 1
Acteon Tableclothes	Crate 1 or Purple Suitcase
Film Holders (4)	Crate 1 Plastic Bin
Bite Wings Tabs Boxes (6)	Crate 1 Plastic Bin
Bite Blocks	Crate 1 Plastic Bin
Ink Pens and Pink Highlighters	Crate 1 Plastic Bin
Masks (1)	Crate 1 Plastic Bin
Laminated Instruction Cards inside Training	Crate 1 Plastic Bin
Plate Covers (2 boxes of 1, 2 / 3 boxes of 0)	Crate 1 Plastic Bin
Dosimeters - Finger (5) and Badge (4) Dosimeter Binder	Black Suitcase
Plastic Containers: Rectangle & Square (13)	Crate 1 Plastic Bin
Imaging Equipment – PXPIS & Computer	Crate 2 Plastic Bin #1 - #8

Additional Inventory

Item Location

Imaging Plates (Size 0, 1, 2)	Central Distribution Crate
Disinfecting Wipes	Sterilization Area
Gloves	PPE Area
Director Chairs (4)	Banners Crate
Hand Sanitizer	Sterilization Area
Black trash bins (4)	Sterilization Crate

X-Ray Area Set-Up

- Set up two, eight (8) foot tables and a small prep table,
- In x-ray crate 1, you will find two (2) Acteon tablecloths. Cover Table 1 and Table 2
- Black trash can (4)

X-Ray Imaging Area Set-Up (Table 1)

See Diagram

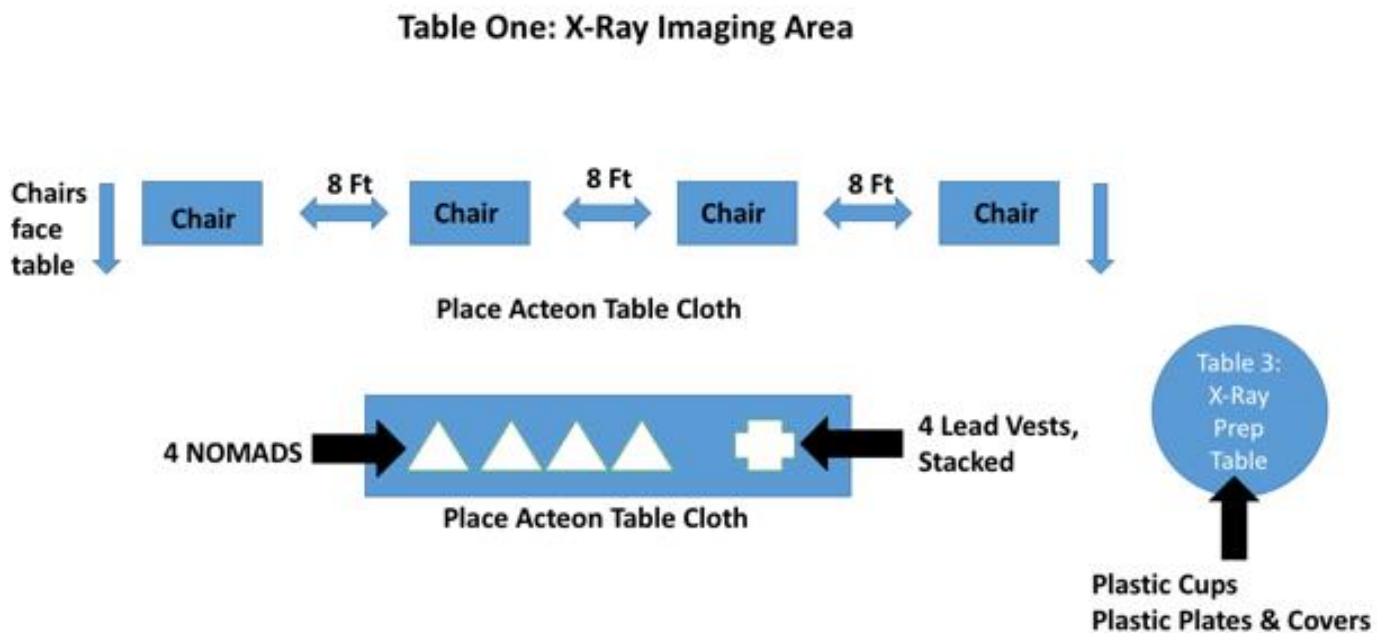


Table 1 Set-Up

1. Out of crate 1, take out NOMADs, chargers and batteries. Charge the batteries
2. Make 4 NOMAD stations which consists of a NOMAD, NOMAD battery and charger.
3. At the end of the table place the following items:
 - Vests – lay flat on table and place at end closest to Prep Table
 - NOMAD Binder and Instruction Cards (4)
 - Hand Sanitizer
 - Disinfection Wipes

Charge NOMAD Batteries the Day Prior

1. Place the charger on the table and connect it to a power source (Power strip or other).
2. Insert a battery into the charger. The green lights should move from side to side indicating that the battery is charging.
3. When the green lights stop moving, then remove the battery

Chair Area – Director Chairs (4)

1. Measure the distance between the chairs. Center of chair to center of next chair should be 8 feet.
2. Attach the NOMAD information sheet to the walls between the chairs.

X-Ray Scanning Set-Up (Table 2)

Table 2 Set-Up

Create 8 Imaging Stations – bins (#1 - #8) See picture

1. Pull out computer, the imaging scanner and cords (which consists of 2 chargers, a two way connection cord – found in white box in the plastic bin)
2. Connect the two units together then connect to a power source.
3. At one end of the table place:
 - Pink Highlighter
 - Ink Pens
 - Hand Sanitizer
4. At each station place small plastic containers to put the plates in.

X-Ray Prep Set-Up (Table 3)

Place the following items on the table

- One Box of size 0, 1, and 2 covers
- Size 0, 1, and 2 Phosphorus Plate
- Bite Wing Tabs
- Dosimeters and Dosimeter Binder
- Plastic Containers

Prep

1. Count the Phosphorus plates and confirm the number that's on the top of the plate container.
2. Any plates not covered, cover and add bite wing tab.

X-Ray Area Procedures

X-Ray Flow

1. Patient will approach Table 3, where a trained volunteer will examine the patients mouth size and assign the patient two plates. They will put the two plates into a plastic container and hand back to the patient.
2. The patient will wait with a chaperone for an x-ray chair to become available. Once a chair is available, the trained volunteer will place a lead vest on the patient.
3. The trained volunteer will place the phosphorous plates in the patient's mouth and engage the image – one plate on each side.
4. The phosphorous plates will then be placed back into the plastic container and the x-ray volunteer will escort the patient to one of the eight imaging stations.
5. The plates will be processed.
6. A dentist will review the image on the computer and highlight the procedure they feel would best benefit the patient.
7. The patient will then be escorted by a chaperone to the Patient Treatment Area.
8. The volunteer from the prep table will be responsible for retrieving the plates and inserting them back into the cover

Volunteer Job Description

Lead Dentist(s):

1. Review the X-Ray images after capture.
2. Highlight in **Pink** on Patient Card in Patient Examination section, a Recommended Treatment that is of the **"Highest"** priority based on X-Ray findings
3. Sign the Patient Card **before** the patient moves to the next area

Trained X-Ray Volunteers:

A team of 2 volunteers – one volunteer will take the x-rays (clean hands) and the other volunteer will place the x-rays (dirty hands)

1. Look at the Recommended Treatment marked on the Patient Examination section of the Patient Card.
2. Gather phosphorous plates, place in a plastic container and hand to the patient to hold.
3. Place lead vest on the patient.
4. Clean hand volunteer takes x-rays
5. Dirty hand volunteer places x-rays – this person needs to wear gloves
6. Take digital radiographs – see complete directions on page 9
7. Place phosphorous plates back into the container.
8. Send patient with dirty hand volunteer to imaging area.
9. Dirty hand volunteer opens phosphorous plate bag and hands plate, holding it tight so as not to expose the plate to light, to a processor.

10. Disinfect the NOMAD and vest – DO NOT remove the battery from the NOMAD during this procedure.
11. Dirty hand volunteer needs to change out gloves between patients.

Student Volunteers:

Process phosphorous plates

- Pull up patient's name on computer
- Refer to patient card
- **LEAVE PHOSPHOROUS PLATES IN THE WELL OF THE PSPIX. The Acteon representative or TeamSmile staff will routinely walk around the tables and retrieve the plates.**
- Dentist will view x-rays

General Volunteers:

- Receivers will receive the patient from the Patient Exam Area and place in waiting chairs. When a director chair is empty, they will take the patient to Table 3 to pick up phosphorus plates and then place in director chair.
- Once the dentist has reviewed the x-rays, a chaperone will escort the patient to the Patient Treatment Area.

Training Information

Important: Every X-Ray Volunteer MUST Be Aware of The NOMAD Guidelines Before Operating any NOMAD

If you are unfamiliar on how to operate the NOMAD, please reference the NOMAD guide.

- Read Operating Procedures (Pages 10-13)
- Read NOMAD Alarms (Pages 18-19)
- Read the Troubleshooting (Pages 20-21)
- Read Safety Precautions (Pages 3-5)
- View NOMAD Training Video

After the TeamSmile orientation, someone from TeamSmile starts the training video.

After the video, the Radiation Safety Officer will review all the following information with you:

- Read TeamSmile's Radiation Protection Program
- Review Posted Guidelines for NOMAD

Check with Program Director for State Guidelines

The following items might be required:

Dosimeters

In some states dosimeters are mandated to monitor radiation. Operators **MUST** wear one during X-Ray capture procedures. Operators must fill out the dosimeter binder with their information in case there is an exposure. The dosimeter must correspond to the appropriate NOMAD.

Operator Vests

In some states operator vests are also state mandated. Operators **MUST** wear one during X-Ray capture procedures.

Taking X-Ray Images

1. Seat the patient in the director chair
2. Place a lead apron over the patient's front body
3. View the Patient's Card to see which quadrant needs to be captured
4. Take the plate from the plastic container, which the patient is holding, place it inside the patient's mouth
5. Position the plate parallel to the roots of the teeth
6. Have the patient close mouth lightly
7. Standing in front of the patient, turn the patients head then position the NOMAD as close to the cheek without touching it. The shield must be parallel to the patient.

8. Follow the X-Ray Capture Procedures to capture the image – **ALWAYS take 2 x-rays.**

X-Ray Capturing Procedure

- Turn on the NOMAD using the Power Button
 - The unit should play double tone and the screen is on
 - When ready to capture an image, pull the trigger once then release it immediately
 - The unit will display (ENABLING X-RAY), then will display (READY)
 - Aim the device away from you and towards the patient then pull the trigger again, holding the trigger down slowly for one true second (say out loud “One thousand one”)
MAKE SURE NO ONE IS IN CONE BEAM EXPOSURE AREA.
 - The Green LED on the unit will turn Yellow
 - You will hear a tone for the duration of the exposure
9. Repeat steps 4-8 to process the other side of the mouth
10. Place phosphorous plates in the plastic container
11. Take off the vest and disinfect
12. Hand off the patient with the container off to a chaperone.

If the NOMAD is dropped, program director needs to return it to Aribex for service.

TeamSmile X-Ray Policies

X-rays – make sure the X-ray NOMAD film button matches the following:

2BW- If area of concern and all primary teeth or 6 year molars are present

4BW- If area of concern and 12 year molars are present

PA- If infection is present or possible extraction treatment planned/screening Dentist should add this to Dentist's comments.

Anterior or Posterior - if marked by Patient Examination Dentist

Limiting Radiation Exposure

- proper film exposure and processing techniques;
- use of protective aprons and thyroid collars, when appropriate; and
- limiting the number of images obtained to the minimum necessary to obtain essential diagnostic information.

Receptor Holders

Dental professionals should not hold the receptor holder during exposure. Under extraordinary circumstances in which members of the patient's family (or other caregiver) must provide restraint or hold a receptor holder in place during exposure, such a person should wear appropriate shielding.

Available holders at a TeamSmile Clinic:

- Bitewing Tabs
- Snap-A-Ray (Autoclave after use) – **VERY IMPORTANT**
- Stabe Disposable Film Holder

Patient Shielding and Positioning

4 x-ray patient chairs are set up and spaced at least 6 feet apart from each other

Lead Apron placed on patient prior to radiation exposure

Only one person allowed in patient chair at a time

Hand-Held X-Ray Units

Hand-held, battery-powered x-ray systems are available for intra-oral radiographic imaging. The hand-held exposure device is activated by a trigger on the handle of the device. However, dosimetry studies indicate that these hand-held devices present no greater radiation risk than standard dental radiographic units to the patient or the operator. No additional radiation protection precautions are needed when the device is used according to the manufacturer's instructions.

These include:

1. holding the device at mid-torso height,
2. orienting the shielding ring properly with respect to the operator, and
3. keeping the cone as close to the patient's face as practical.

If the hand-held device is operated without the ring shield in place, it is recommended that the operator wear a lead apron. All operators of hand-held units will be instructed on their proper storage. Due to the portable nature of these devices, they should be secured properly when not in use to prevent accidental damage, theft, or operation by an unauthorized user. Units will be stored with the batteries removed.

Film Exposure and Processing

All film should be processed following the film and processor manufacturer recommendations. Films will accompany the patient to the Acteon processing station. The individual at the computer station will pull up the patient chart to process the x-rays to, then put on gloves to remove the x-ray plate from the sleeve and place into the processing machine. Dispose of used sleeves and gloves in trash bin and wipe down any contaminated surface with appropriate disinfectant.

Quality Assurance Procedures for Assessment of Radiographic Equipment

NOMADS – Yearly Calibration

PSPIX – Day before each event- Set up and run through with Acteon Representative

Abdominal and Thyroid Shielding- Day Before each event – Visual and Manual inspection

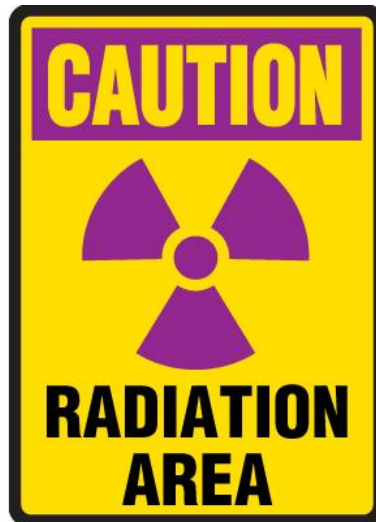
Training and Education

TeamSmile Program Director trains all x-ray dental volunteers on how to use the NOMAD the morning of the event.

TeamSmile Program Director assigns Dosimeters/Ring Monitors to the appropriate dental volunteer and has her/him fill out the paper work.

Acteon or TeamSmile Program Director trains all processing volunteers on the computer system the morning of the event.

NOMAD Operating Guidelines



Important: The NOMAD device is VERY fragile

- Do not drop NOMAD. If dropped, please report to the Program Director. There may be undetectable damage that can cause a radiation leak.
- Don't operate if the backscatter shield is broken. If there is a crack in the shield, report to Program Director.
- Don't operate if the Collimator Cone is broken. If there is a crack in the cone beam, report to Program Director.
- Backscatter shield must be in the correct position (at the outer end of the collimator cone and close to the patient) on the hand-held imaging device during an exposure.
- When holding the device, place your hands behind the shield and remain directly behind the device's shield.
- Keep a 6-foot radius between the hand-held imaging device and any individual other than the operator and patient when you make radiographic exposures.
- Do not attempt exposure if anyone other than the patient is in the direct beam.
- Seat the patient with a wall behind him/her. Hold the NOMAD parallel to the patient. Have the patient turn their head sideways, and aim at the patient towards the wall.
- Operators and assistants must remain within a 6-foot radius
- Operators and Assistants must wear 0.5mm Lead Equivalent Aprons if mandated by State Code and a dosimeter if mandated by State Code. TeamSmile Program Director will advise you of the state code.
- Operators must wear appropriate PPE, check with Program Director to see if lead vest is required in your state.
- Place the NOMAD imaging device back in its hard case when unattended.
- Keep units on designated tables and out of reach of patients.
- Procedures to limit the use of the hand-held device to intraoral purposes.

X-Ray Area Tear-Down - Keep One X-Ray Station Open Until ALL Treatment Has Been Completed

X-Ray Crate #1

NOMADs:

1. Turn the NOMAD power off
2. Disinfect NOMAD
3. Place NOMAD, batteries and charger in crate – DO NOT DISINFECT NOMAD WITHOUT THE BATTERY ATTACHED
4. Place NOMAD binder in crate

Table 3:

1. Count phosphorous plates and make sure the number we have corresponds to the number on the plastic container
2. If plates are missing, let TeamSmile Program Director know immediately
3. Take plates to Central Distribution
4. Place covers and bite wings into crate
5. Place containers, pens, highlighters and snap a rays in marked container

Sterilization Crate

Vests:

1. Disinfect
2. Lay inside the Sterilization bin

X-Ray Crate #2 Laptop and PSPIX

1. Shut down computer completely
2. Disconnect the power cables and gently fold them then Velcro
3. Place the PSPIX in the corresponding numbered plastic bin
4. Place the cords in the white box
5. Place the corresponding number computer on top

Additional Items

Return other inventory items back to areas of storage per the inventory checklist, page 2 of this manual.

Additional Information:

- **Hand Sanitizer:** Turn it to lock it in place and avoid spillage during transport.
- **Dosimeters and Ring dosimeters:** Gather and give to Program Director with Dosimeter Binder.
- **Gloves:** Combine boxes of same size, if possible, then return to PPE.

Important: Always wear gloves when handling disinfecting wipes . Gloves can be found in the PPE Area.