

Charleston County Coroner's Office Policy #31

Title: Portable Dental X-Ray Machine

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Effective Date: 2/03/2015

Updated: 1/28/2019, 8/20/21

Reviewed: 11/16/2023

Authorized By: Bobbi Jo O'Neal, Coroner

31.1 POLICY

The Coroner's Office owns a handheld X-ray machine, NOMAD Pro 2, which will only be operated by the contracted Forensic Odontologist at the discretion of the case Deputy, the Chief Deputy, or the Coroner to facilitate identification of a decedent. The unit shall be maintained, registered, and used in accordance with DHEC regulations 61-64 under the Bureau of Radiological Health (Appendix 'B'- DHEC Regulation) and in accordance with the manufacturer's operator manual (Appendix 'C'- ARIBEX Nomad Pro Operator Manual). The need for comparative dental X-rays shall fall under the Decedent Identification Policy of this office.

31.2 PROCEDURE

1. The unit shall only be operated by the odontologist who must be licensed by the South Carolina Board of Dentistry. The unit must be adequately secured when not in use at the odontologist's office or the Coroner's Office to prevent unauthorized use or theft. The investigating Deputy is responsible for obtaining known standard X-rays when available and forwarding them to the odontologist for comparison.

2. *Pregnant Workers:* If the odontologist is pregnant, she is not permitted to use the X-ray machine.

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3. *Shielding:* The operator shall wear gloves, a .5mm lead apron with thyroid shield, and a personal monitoring badge at the discretion of the odontologist per the variance approval letter from DHEC dated July 31, 2013. If the odontologist chooses to wear the lead apron, reproductive organs of the lower torso shall be shielded. The NOMAD Pro 2 must be used with the scatter shield in place in order to minimize the scatter radiation exposure to the operator at all times.

4. *Pregnant Patients:* In order to comply with DHEC regulations, this policy must state that no extra precautions are required when taking radiographs of dental remains belonging to a pregnant cadaver.

5. *Personnel monitoring:* The operator shall wear a monitor badge at the discretion of the odontologist per the variance approval letter. Badges are not required per the DHEC variance letter when the NOMAD Pro 2 is used.

6. *Training new employees:* Only the contracted forensic odontologist may use the device and must complete the training program supplied by the manufacturer to include watching the Nomad training video and a review of the operator manual prior to using the x-ray unit. The training shall be documented per DHEC regulations and maintained in the Coroner's Office.

7. *Methods of quality assurance:* Quality assurance of radiographs produced by the unit shall be checked by the odontologist at the time they are produced. Any unsatisfactory radiographs which are blurry, faded, obscured, etc., shall be re-taken. Any further problems shall be addressed with the manufacturer/vendor.

8. *Patient Holding:* In order to produce radiographs that are directly comparable to forensic cases, dental remains are radiographed using the same techniques as those employed in living patients. In particular, XCP dental film holders are utilized to ensure proper positioning of the film/sensor. Usually, gravity and the weight of the specimen is sufficient to maintain the position of the XCP holder. In cases where this technique is inadequate, the

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film may be secured to the subject using items such as tape, rubber bands, wax, and impression material. The radiograph operator is not employed to hold the film/sensor in position.

9. Lead Aprons: Lead aprons, thyroid collars, and any lead gloves shall be checked at least annually for cracks and holes that could compromise the radiation protection they provide. This testing shall be documented and maintained in the Coroner's Office. Records of this testing shall be kept for two years, or until the next DHEC inspection, whichever is later.

10. Performance Testing: A log depicting the use of the unit shall be maintained at the Coroner's Office. The unit shall have an Equipment Performance Test done annually (every July) in accordance with DHEC regulations 61-64, Appendix F, Title B Regulations.

The vendor is:

Health Physics Consultants, LLC

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Charleston, SC 29414

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HPCLLC@att.net

11. Notice to Employees: The standards for protection against radiation "Notice to Employees" shall be posted in a common employee area for their review and consultation. (See copy attached to this policy)

12. Maintaining Reports: Per DHEC all reports and documentation must be maintained for five (5) years.