

Assist to take radiographs of animals, and process

Level 3

Credits 4

Purpose People credited with this unit standard are able to: prepare the x-ray machine and self for the procedure as directed by the veterinarian; position the patient following safety precautions, and take the x-ray image as directed by the veterinarian; maintain a darkroom and develop radiographs using manual technique; develop radiographs using automatic processing; and identify and store radiographs to be easily retrievable.

Subfield Animal Care and Handling

Domain Veterinary Nursing

Status Registered

Status date 8 August 1996

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Entry information Open.

Accreditation Evaluation of documentation and visit by NZQA, industry and teaching professional in the same field from another provider.

Standard setting body (SSB) Primary Industry Training Organisation

Accreditation and Moderation Action Plan (AMAP) reference 0228

This AMAP can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Special notes

- 1 For credit, evidence must be in accordance with the statutory and industry requirements contained in the following documents.
Relevant and current National Animal Welfare Advisory Committee (NAWAC) Codes of Welfare and Codes of Recommendations and Minimum Standards, available at <http://www.maf.govt.nz>, under animal welfare.
Relevant New Zealand Veterinary Association (NZVA) standards, available from NZVA, PO Box 11-212, Manners Street, Wellington (<http://www.vets.org.nz>) including the current version of *BESTPRACTICE™ Companion Animal Practice Standards (Section 6 – Radiology)*.

Animal Welfare Act 1999, Health and Safety in Employment Act 1992, Radiation Protection Act 1965, Radiation Protection Regulations 1982, and any subsequent amendments.

National Radiation Laboratory (NRL) C21 – *Code of Safe Practice for the Use of X-rays in Veterinary Diagnosis (2005)*.

2 Underpinning Knowledge

The following areas of knowledge underpin performance of the elements in this unit standard:

Element 1

Structure and function of x-ray machine, production of x-rays

Nature and characteristics of x-rays

Scattered radiation

Types of x-ray machines and their uses

Radiographic film, types, size, structure of radiographic film and screens, intensifying screens

Types, care, and maintenance of cassettes and grids

Safe storage of films

Element 2

Standard anatomical directional terms

Use of ancillary equipment to assist patient positioning

Radiation safety and regulations

Personal monitoring and monitoring records

Position, labelling requirements for radiographs to be sent and scored on NZVA, Hip Dysplasia (HD) or Elbow Dysplasia (ED) Schemes

Element 3

Darkroom design, ventilation, lighting, safety features, structure of walls, wet/dry areas

Equipment found in darkroom

Precautions for use of and health regards of developing and fixing solutions

Methods of checking darkroom for processing or film store faults

Element 4

Precautions for use of and health hazards of developing and fixing solutions especially Gluteraldehyde

Element 5

NZVA regulations regarding ownership of radiographs and their legal importance.

Elements and performance criteria

Element 1

Prepare the x-ray machine and self for procedure as directed by the veterinarian.

Performance criteria

- 1.1 Cassette and film are selected and placed according to size of animal and area required to be radiographed, and suitable identification marking of film is selected as directed by the veterinarian.
- 1.2 Protective gear and monitoring devices are worn in radiography room to protect from x-ray beams in accordance with NZVA *Companion Animal Practice Standards (Section 6 – Radiology)*, and as directed by the veterinarian.

- 1.3 Warning systems are activated, in accordance with NZVA *Companion Animal Practice Standards (Section 6 – Radiology)* to alert personnel and public prior to and during exposure.

Element 2

Position the patient following safety precautions, and take the x-ray image as directed by the veterinarian.

Performance criteria

- 2.1 Animal is prepared according to process and restrained to facilitate accurate imaging as directed by the veterinarian.
- Range mechanical, manual, chemical.
- 2.2 Patient is positioned using restraining aids, as directed by the veterinarian, to ensure there is no movement of patient at time of exposure.
- Range free from foreign materials, as close to cassette as possible, in middle of x-ray cassette, correct side down if lateral view.
- 2.3 Cassette is identified in terms of name, number, left, right, or other sides as required.
- 2.4 Precautions are taken, according to NZVA *Companion Animal Practice Standards (Section 6 – Radiology)*, to minimise radiation dose to staff and patient.
- Range non-repetition of radiographs, use of collimator, fast film, instructions to assistants, minimum number of personnel in room at time of exposure, personal safety check, age of personnel, pregnancy status of personnel.

Element 3

Maintain a darkroom and develop radiographs using manual technique.

Performance criteria

- 3.1 Protective clothing is worn when handling solutions according to type of solution used.
- Range goggles/face shield, rubber gloves, protective overalls, mask.
- 3.2 Equipment and fluids are checked and adjusted to ensure optimum state for processing.
- Range supply, temperature, mix.

- 3.3 Film is prepared, and placed in developing tank for time according to temperature of developer and according to darkroom safety procedures.
- 3.4 Cassette is reloaded, avoiding damage to intensifying screen inside the cassette.
- 3.5 Film is washed, fixed, rewashed, and air dried to a state suitable for storage.
- 3.6 Factors affecting poor image are identified in terms of the developing process.
- Range static, poor maintenance of wet/dry areas, incorrect temperature of solutions, incorrect developing and fixing times, light leaks, incorrect safe light, expired solutions.
- 3.7 Processing tanks and fluids are maintained and fluids replenished or disposed of according to manufacturer's instructions.

Element 4

Develop radiographs using automatic processing.

Performance criteria

- 4.1 Darkroom is maintained to ensure films develop to a high quality.
- Range cassettes, intensifying screens, film storage, maintenance of machine especially rollers, processing tank, maintenance of fluids.
- 4.2 Protective clothing is worn when handling solutions according to type of solution used.
- Range goggles/face shield, face mask with air filter, rubber gloves, protective overalls.
- 4.3 Film is processed according to manufacturer's instructions.

Element 5

Identify and store radiographs to be easily retrievable.

Performance criteria

- 5.1 Radiographs are permanently identified according to NZVA *Companion Animal Practice Standards (Section 6 – Radiology)*.
- Range lead letters, graphite tape, photographic marker.
- 5.2 Radiographs are stored to prevent deterioration and are easily retrieved.
- Range dry, free of excessive dust and light, easily identified, stored upright, logically filed.

Please note

Providers must be accredited by NZQA, or an inter-institutional body with delegated authority for quality assurance, before they can report credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be accredited by NZQA before they can register credits from assessment against unit standards.

Accredited providers and Industry Training Organisations assessing against unit standards must engage with the moderation system that applies to those standards.

Accreditation requirements and an outline of the moderation system that applies to this standard are outlined in the Accreditation and Moderation Action Plan (AMAP). The AMAP also includes useful information about special requirements for organisations wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

Comments on this unit standard

Please contact the Primary Industry Training Organisation standards@primaryito.ac.nz if you wish to suggest changes to the content of this unit standard.