



Hheads of the European Radiological
protection Competent Authorities

Veterinary applications of ionising radiation

HERCA Task Force on Veterinary Applications

Main results of the Questionnaire 'National regulatory requirements with regard to veterinary medical applications of ionising radiation' and conclusions of the TF

*Approved on the occasion of the 12th HERCA Board of Heads meeting
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TASK FORCE on Veterinary Applications

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1. The Task Force Veterinary Applications

In the fall of 2012, the subject of radiation protection in veterinary medicine was raised during the meeting of the HERCA Board. Issues with regard to this subject had been brought to the attention of HERCA by the European College of Veterinary Diagnostic Imaging (ECVDI).

In October 2012, the Board decided to charge a small Task Force (TF) to further explore the issues in this field. This TF was led by Dr. Lodewijk Van Bladel (FANC/Belgium). Contributing experts were Jolien Berlamont (FANC/Belgium), Lajos Balogh (Hungary), Herbert Michalczak (BMU, Germany), with Kathelijne Peremans (Ghent University /Belgium) acting as external expert.

This TF drew up a questionnaire which looked at the general radiation protection regulatory requirements in veterinary medicine applications of ionizing radiation. The results of this study showed large differences in the requirements applicable in the HERCA member countries. The TF also noticed the increasing use of more complex imaging procedures and of different radio-therapeutic modalities, which may imply greater risks of exposure of humans to ionising radiation. These results were presented during the HERCA Board meeting in Berlin, Germany and on which the Board decided to establish a Working Group on veterinary applications of ionising radiations (WG Vet).

During the 15th meeting of HERCA (spring summer 2015) a proposal for a radiation protection framework for veterinary application of ionizing radiation will be presented by the WG.

2. The questionnaire 'National regulatory requirements with regard to veterinary medical applications of ionising radiation'

This TF drew up a questionnaire which looked at the general radiation protection regulatory requirements in veterinary medicine applications of ionizing radiation, and more in detail on the radiation protection education and training requirements for veterinarians as applicable in the different HERCA member countries. The questionnaire was sent out on April 29th 2013. A total of 24 member countries had replied by October 30, 2013.

As expected on the basis of information provided by ECVDI, the results of this study showed large differences in the requirements applicable in the HERCA member countries. We also noticed the increasing use of more complex imaging procedures (interventional radiology, CT, diagnostic nuclear medicine) and of different radio-therapeutic modalities (metabolic radiotherapy, tele-therapy, sealed sources), which may imply greater risks of exposure of humans to ionising radiation. Several countries have expressed the need for developing guidance with regard to the regulatory approach for these emerging or rapidly increasing, more risk-bearing applications.

3. Main Conclusions of the TF Veterinary Applications: setting up of an HERCA Working Group on Veterinary Applications

To meet the needs of the HERCA member countries, the TF suggested to set up a Working Group on veterinary applications of ionizing radiation (WG Vet) with a few interested countries. Particular attention will be devoted to techniques that imply a higher risk of exposure (graded approach), whereby the primary focus will be on the exposure of humans, instead of on the animals themselves.

The inclusion of these planned activities on veterinary medicine within the Working Group on Medical Applications (WGMA) was envisaged and discussed, but not preferred by this group. However, many issues encountered in veterinary medicine are largely comparable to those in medicine as applied on humans. And in several member countries, the same departments or experts deal with both human and veterinary applications. Therefore, for practicality reasons, the meetings of WG Vet will be organised to the extent possible in conjunction with meetings of WGMA.

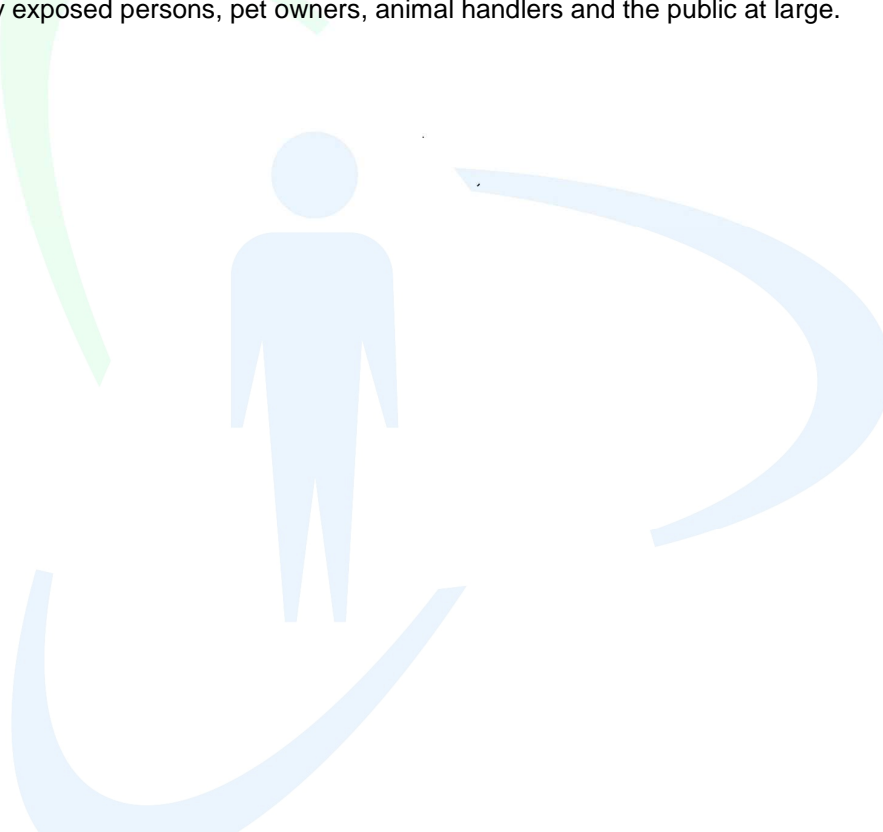
During the HERCA Board meeting in Berlin, Germany, the Board took note of the final conclusions of the TF in the veterinary field and approved to establish a Working Group on veterinary applications of

ionising radiations (WG Vet). This WG will be chaired by Mrs Jolien Berlamont, supported by Mr Lodewijk Van Bladel (both FANC, BE).

During the 15th meeting of HERCA (spring summer 2015) a proposal for a radiation protection framework for veterinary application of ionizing radiation is to be presented by the WG. Those proposals shall take into account the following principles:

- Primary focus will be on the protection of humans, not of the animals themselves;
- They will take into account the principle of "graded approach"
- They will focus on the education and training requirements for veterinary doctors and their 'helpers'
- The proposal should be developed in close collaboration with representative scientific/professional societies of veterinary medicine.

The ultimate goal is to provide a solid basis for a (more) harmonised approach throughout Europe. This should provide better guarantees for the justified and optimised diagnosis and treatment of animals in each and every of our member countries, and thus also of those who are taken abroad to receive treatment. The approaches proposed will have to duly consider the exposure risks of professionally exposed persons, pet owners, animal handlers and the public at large.



Appendix 1

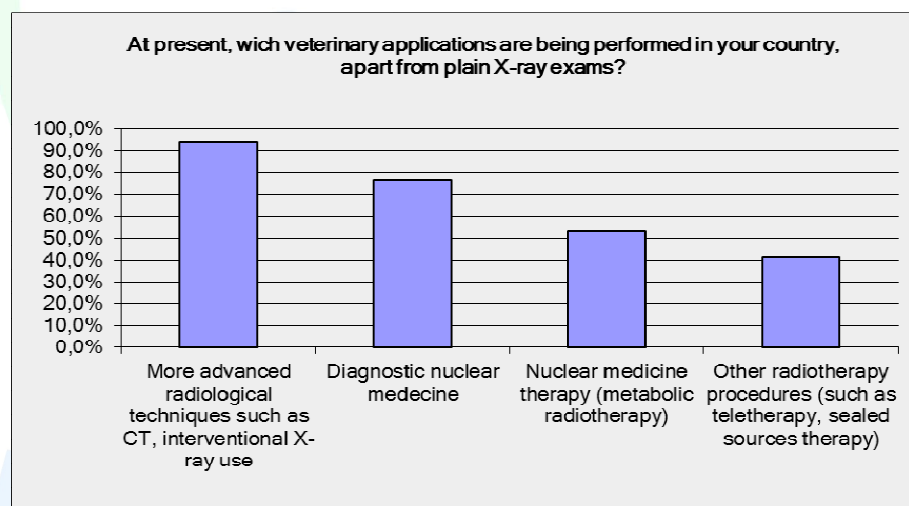
Main results of the Questionnaire 'National regulatory requirements with regard to veterinary medical applications of ionising radiation'

From the 31 countries participating in HERCA which received the questionnaire, 24 countries have answered. The responding countries were the following: Austria, Belgium, Bulgaria, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Iceland, Ireland, Lithuania, Luxembourg, Malta, Norway, Poland, Romania, Slovenia, Spain, Sweden, Switzerland, The Netherlands, United Kingdom.

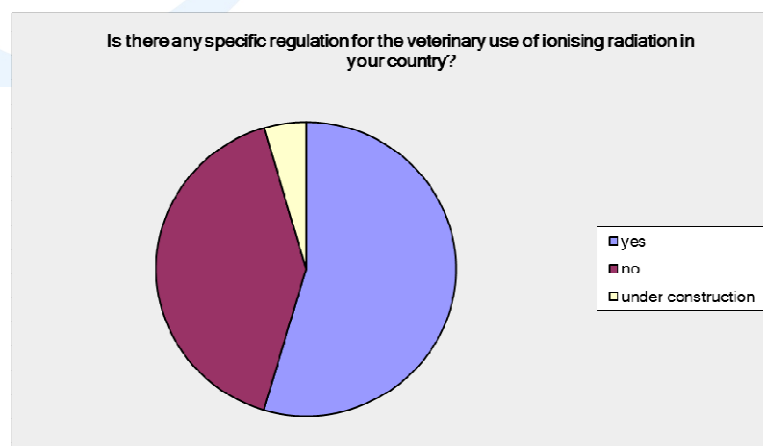
Information is not available for the following countries: Croatia, Cyprus, Hungary, Italy, Latvia, Portugal, Slovakia.

The original questionnaire consisted of 49 questions of which the most imported ones will be covered in this document.

1. At present, which veterinary applications are being performed in your country, apart from plain X-ray exams? (17/24 responded)



2. Is there any specific regulation for the veterinary use of ionizing radiation in your country? (22/24 responded)



3. What does the veterinary radiological practitioner require: (19/24 responded)

a license	78,9%	15
a specific notification	15,8%	3
only for specific applications	5,3%	1

4. Is radiation protection an item systematically covered in their university E&T? (21/24 responded)

yes	76,2%	16
no	23,8%	5

Different ways were specified (in case the answer was "yes"):

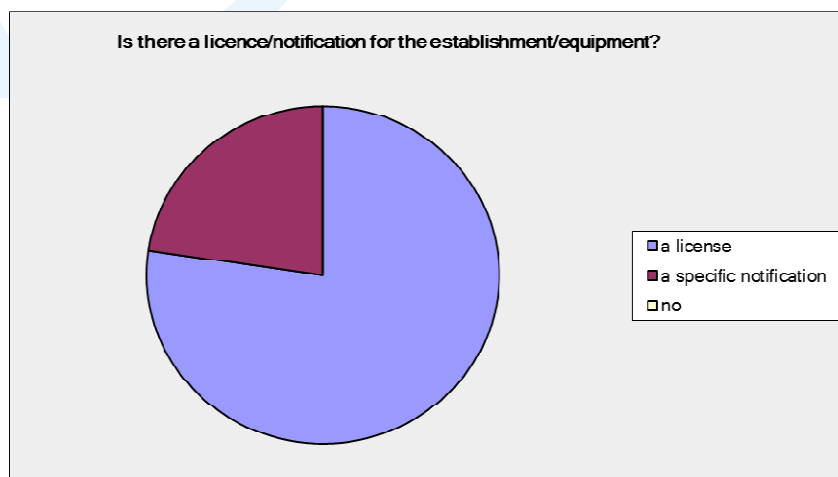
- part of their training to become a vet
- Only basic medical physics
- a training in radiation protection to become a radiation protection officer
- a course on radiology and radiation protection as part of the education, courses on the use of radioactive substances can also be obtained at the university and are required for radiological practitioners working with open radioactive sources.
- Only for planar radiographies. (For CT the veterinarian must have the required expertise in RP)

5. Can technologists (non-veterinarians) be allowed to take radiographs? (22/24 responded)

yes	68,2%	15
no	31,8%	7

In the counties where technologist can take radiographs, for 11 countries this includes more sophisticated diagnostic applications and therapy.

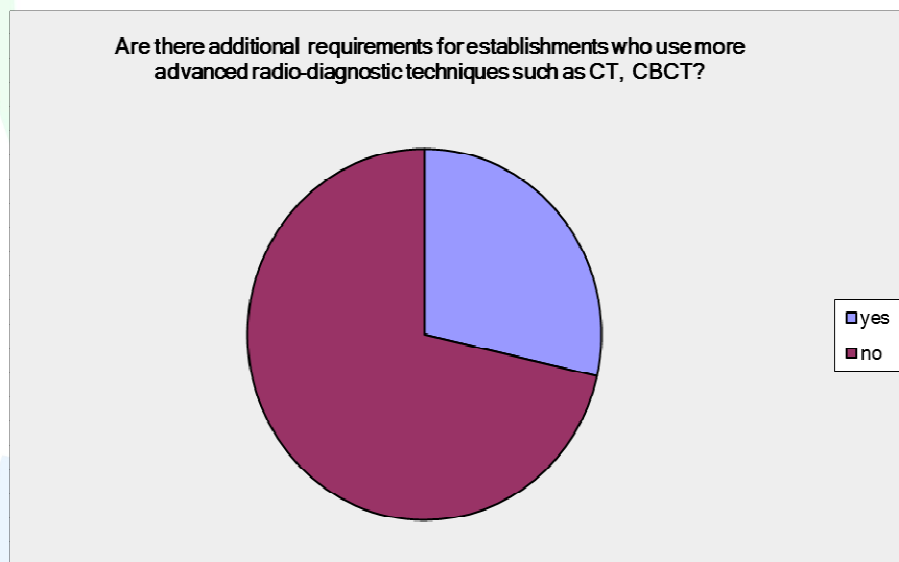
6. Is there a license or notification for the establishment/equipment? (22/24 responded)



Is this licence/notification limited in time? if yes:

- Limited to 10 years
- Practice unlimited, device 10 years
- Change of X-ray device or address implies new prior authorization request
- Limited to 5 years
- The permit required from the environment regulator for keeping and disposing of radioactive substances is reviewed on an annual basis.
- To date establishments have notified the regulatory body and are subject to inspections. Licences that will be issued in future be issued will be limited in time.
- There is no time limit, but all licenced establishments are subjected to regular inspections (every 4 years) were the practice is evaluated with reference to req. in the radiation protection act.
- Maximum of 5 years
- Limited to 4 years
- limited in time (up to 3y (first time) and up to 10 years in the following period)

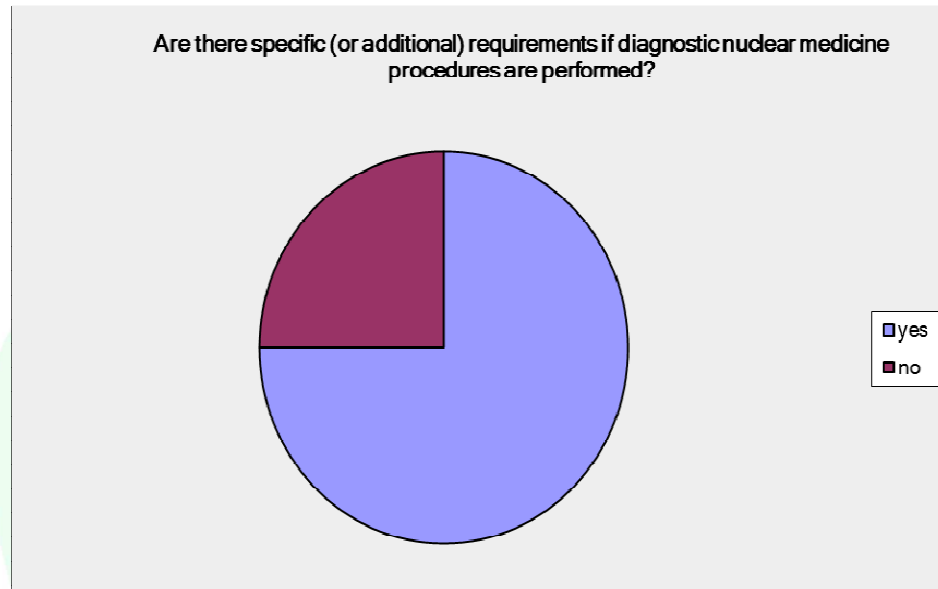
7. Are there additional requirements for establishments who use more advanced radio-diagnostic techniques such as CT, CBCT? (21 of 24 responded)



If yes:

- Special course on veterinary CT
- Room shielding
- A feasibility license must be issued and a complete radiation protection and screening study must be submitted for evaluation.
- Evidence of relevant further education
- Nuclear medicine demands specific RP-regulations for staff. Teletherapy demands shielding in the building, etc.
- They would have to consult with a Radiation Protection Adviser with regards to the construction, shielding, doses to staff,... and submit the RPA report.

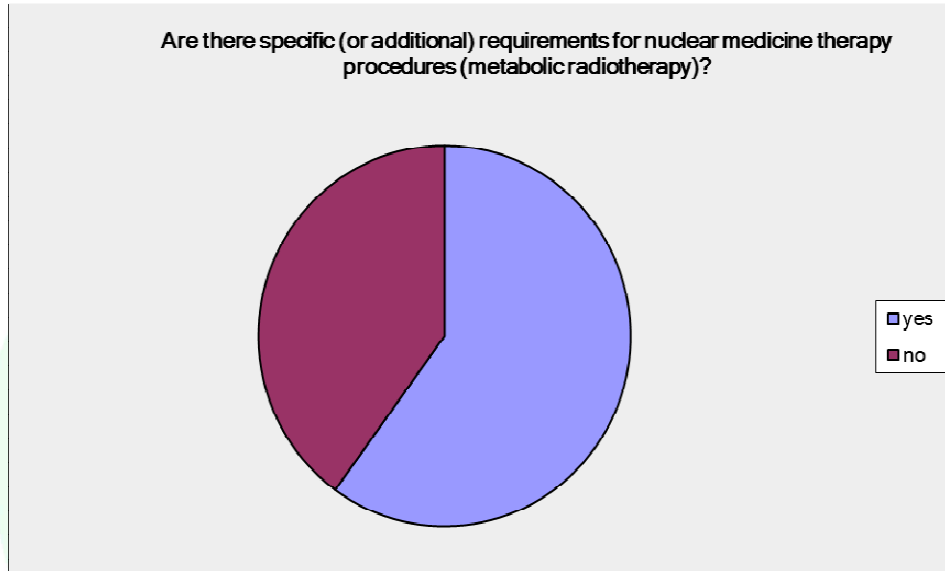
8. Are there specific (or additional) requirements if diagnostic nuclear medicine procedures are performed? (20/24 responded)



More specific:

- Specific course in radiation protection with open sources performed by an university animal hospital
- Requirements for procedures with unsealed sources and ring dosimeters
- Requirements for waste, contamination risks
- A permit is required form the relevant (devolved administration) environmental regulator to keep and dispose of radioactive substances.
- Safety requirements for work involving ionising radiation sources
- Nuclear medicine facilities are required to be authorized according to regulation on nuclear and radioactive facilities
- Appropriate room equipement, special training for staff, shielding equipment
- A feasibility license must be issued and a complete radiation protection and screening study must be submitted for evaluation.
- More or less similar to the requirements applied for nuclear medicine examinations on humans - although mostly focused on protection of staff.
- The necessary degree of radiation protection expertise is higher: one has to follow extra courses on radiation protection
- Special requisite expertise in RP
- Authorisation of practice - time limited
- The veterinarian needs theoretical and practical experience, a radiation protection expert is needed
- They would have to consult with a Radiation Protection Adviser with regards to the construction, shielding, doses to staff, training etc and submit a report with regards to the commissioning and quality assurance aspects, storage of the generator, security and radiation protection aspects of the practice etc.
- ST guides for radiation safety in nuclear medicine are applied.

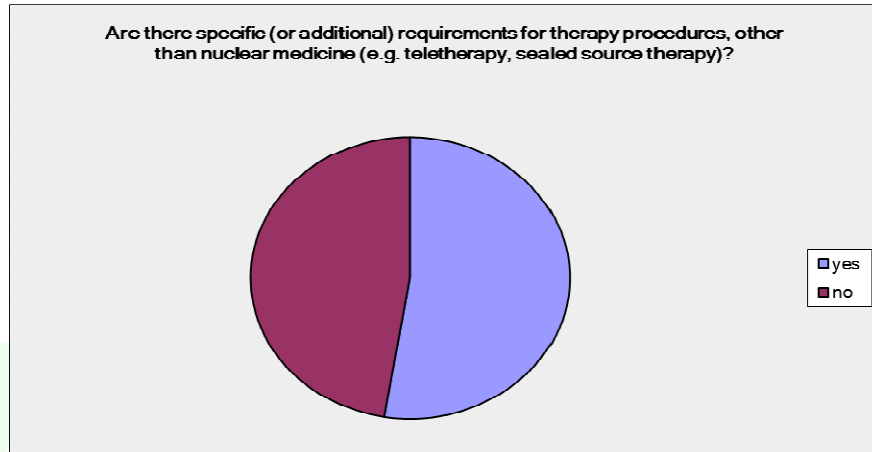
9. Are there specific (or additional) requirements for nuclear medicine therapy procedures (metabolic radiotherapy)? (20/24 responded)



More specific:

- Specific course in radiation protection with open sources performed by an university animal hospital
- Requirements for procedures with unsealed sources, clearance level
- Safety requirements for work involving ionising radiation sources
- Requirements related to patient release and radioactive waste management of patient excreta must be implemented by the licensee.
- Appropriate room equipment, special training for staff, shielding equipment
- More or less similar to the requirements applied for nuclear medicine therapy on humans - although mostly focused on protection of staff.
- A feasibility license must be issued and a complete radiation protection and screening study must be submitted for evaluation.
- Radiation expertise, risk assessment, etc. Nothing different from other applications of ionising radiation
- Authorisation of practice - time limited
- Special requisite expertise in RP
- The veterinarian needs theoretical and practical experience, a radiation protection expert is needed
- They would have to consult with a Radiation Protection Adviser with regards to the construction, shielding, doses to staff, transport, receipt of the radionuclide, contamination monitoring, training and good practice, risk assessment, designation of controlled and supervised areas, dosimetry, etc... and submit a report with regards to radiation protection aspects of the practice etc.

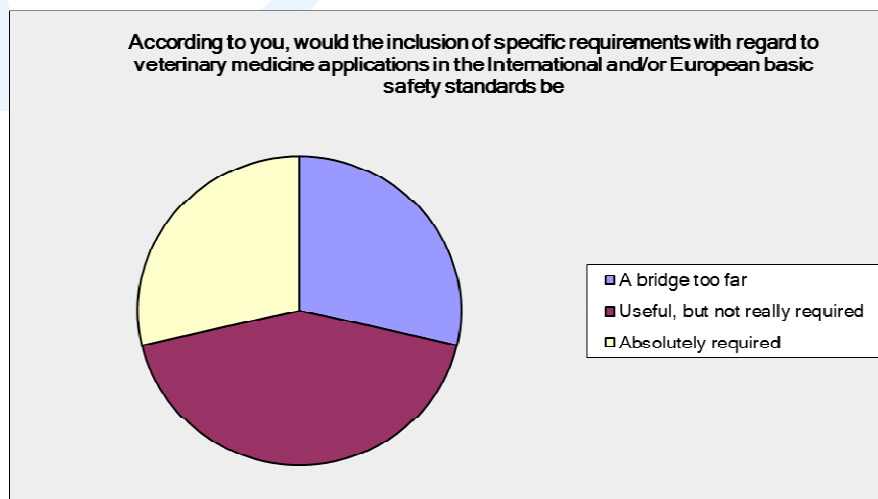
10. Are there specific (or additional) requirements for therapy procedures, other than nuclear medicine (e.g. teletherapy, sealed source therapy)? (19/24 responded)



More specific:

- Specific degree in teletherapy for veterinary doctors and medical physicist is also required
- Safety requirements for work involving ionising radiation sources
- All the technical requirements (shielding, equipment/sources verification, training, ...) for human radiotherapy facilities must be implemented.
- Room shielding
- A feasibility license must be issued and a complete radiation protection and screening study must be submitted for evaluation.
- There would be - more or less similar to the requirements applied for nuclear medicine therapy on humans - although mostly focused on protection of staff.
- Special requisite expertise in RP
- The veterinarian needs theoretical and practical experience, a radiation protection expert is needed
- Permanent involvement of medical physicists in all procedures and extended QC programme

11. According to you, would the inclusion of specific requirements with regard to veterinary medicine applications in the international and/or European basic safety standards be required? (21/24 responded)



12. Do you also feel the need of life-long records of diagnostical/therapeutical applications using ionizing radiation in animals?

