

## Appendix III

### Illustrative examples of Competence Assessment

#### Assessment of Competence should

1. include a clear description and explanation of the standards expected
2. reflect the complete procedure (planning, execution, control of outcome)
3. have a time frame in which the procedure can be realistically executed (including e.g. planning of the procedure, workspace preparation and documentation)

#### Assessment criteria for a practical skill: blood sampling from a conscious rabbit

*Assessment will test for: Knowledge of indicators of good/poor health or any sign of pain and distress in the animal, knowledge of the influence of restraint on laboratory animals, different routes of blood sampling sites and where appropriate choice of method, sample volumes and sampling frequencies, (as well as effect of “time of day” on sampling).*

Module 7 and 8: Minimally invasive procedures	
Learning outcome	Assessment criteria
The trainee should be able to successfully take a blood sample from a <i>conscious</i> rabbit without causing the animal undue distress	<p>S/he should be able to demonstrate to the assessor that s/he:</p> <ul style="list-style-type: none"> <li>• can recognise the normal demeanour and appearance of a healthy rabbit and signs of ill-health, pain or distress in the species</li> <li>• has determined that appropriate authorities exist for the proposed procedures</li> <li>• can pick up, handle and restrain a rabbit in a way that the animal is supported and does not indicate distress</li> <li>• has knowledge of blood volumes, blood sampling routes and techniques suitable for rabbits so that the least invasive, most appropriate is selected</li> <li>• can select and prepare equipment (e.g. correct needle size, clippers/scissors, surgical swabs)</li> <li>• can prepare the sampling site with minimal distress to the animal and collect blood successfully without causing adverse effects (pain, haematoma, bleeding)</li> <li>• knows how to provide appropriate aftercare, including methods for haemostasis and to provide for expected and unexpected events (e.g. can decide on appropriate monitoring intervals)</li> <li>• knows (and can recognise) the adverse effects to look for and how and when to deal with these, and is aware of the need to contact veterinarian or other “designated” person for assistance.</li> <li>• knows how to handle blood samples to ensure adequate labelling and thorough mixing</li> <li>• knows how to keep appropriate records (e.g. cage labels, other procedural records)</li> </ul>

## Assessment criteria for a practical skill – Anaesthesia

*Assessment will test for: Choice and understanding of anaesthetic properties, be knowledgeable of influence of anaesthetic agent on laboratory animal and scientific outcome, choice of method as proposed in the procedure*

Module 20: Anaesthesia for minor procedures	
Learning outcome	Assessment criteria
The trainee should be able successfully to induce, maintain and recover a mouse from brief (10mins) anaesthesia in a mouse	<p>The trainee should be able to:</p> <ul style="list-style-type: none"> <li>• Determine that they appropriate legal authorities exist in order to perform the procedure</li> <li>• Know the effects of anaesthesia on the mouse and possible effects on the scientific study</li> <li>• Demonstrate handling the mouse with empathy and appropriate care, such that it is not distressed</li> <li>• Assess the health and well-being of the mouse, such that it is suitable for anaesthesia. Demonstrate obtaining and recording bodyweight.</li> <li>• State an anaesthetic suitable for the species and duration of the procedure</li> <li>• Demonstrate correct setup and safe use of anaesthetic equipment and anaesthetic agents.</li> <li>• Knows proper dosage/concentration and can calculate dose/volumes in case of injectable anaesthetics</li> <li>• Demonstrate correct induction technique (eg induction chamber, injection)</li> <li>• Explain/Name methods of assessing anaesthetic depth and demonstrate one method that can be used, for example, to show that the mouse is sufficiently anaesthetised for the procedure to be performed. Know how to monitor basic physiological functions and demonstrate measurement of respiration rate.</li> <li>• Discuss the possible adverse effects of anaesthesia, such as hypothermia, and describe the steps taken to avoid these.</li> <li>• State what emergency situations may arise and how to manage these.</li> <li>• Demonstrate recovering the mouse from anaesthesia and discuss the clinical signs that indicate good or poor recovery.</li> <li>• Explain after-care of the mouse, including any special nursing care required.</li> <li>• Correctly update records, such as: cage label, unit daybook, medicine and other procedural records.</li> </ul>

**Module 21: Anaesthesia for surgical or prolonged procedures**

Learning outcome	Assessment criteria
<p>The trainee should be able successfully to induce, maintain and recover a mouse from anaesthesia for an invasive surgical procedure</p>	<p>The trainee should be able to:</p> <ul style="list-style-type: none"> <li>• Determine that there is an appropriate legal authorisation to perform the procedure.</li> <li>• State how the concept of “Refinement” applies to anaesthesia for a surgical procedure.</li> <li>• Relate the effects an anaesthetic agent may have on the mouse and how this may influence the study.</li> <li>• Demonstrate handling the mouse with care, such that it is not distressed</li> <li>• Assess the health and well-being of the mouse. Discuss the effects that previous Procedures or existing pathology may have with regard to suitability for anaesthesia. Demonstrate obtaining and recording bodyweight.</li> <li>• Knows proper dosage/concentration and can calculate dose/volumes in case of injectable anaesthetics</li> <li>• State/Know an anaesthetic suitable for the species and duration of the procedure (may have taken veterinary advice in advance).</li> <li>• Discuss analgesia for the procedure, including choice of agent, route of administration to cause minimal stress to the animal, followed by assessment for effectiveness.</li> <li>• Demonstrate correct setup and safe use of anaesthetic equipment and anaesthetic agents.</li> <li>• Demonstrate correct induction technique (e.g. induction chamber, injection)</li> <li>• Discuss methods of assessing anaesthetic depth for surgery and demonstrate one method that can be used to show that the mouse is insensible to a painful stimulus.</li> <li>• Demonstrate understanding of monitoring basic physiological functions and vital signs, using clinical signs and/or monitoring apparatus such as pulse oximeter.</li> <li>• Discuss the possible adverse effects of anaesthesia, such as hypothermia, and the steps taken to avoid these.</li> <li>• Discuss what emergency situations may arise and how to manage these.</li> <li>• Demonstrate recovering the mouse from anaesthesia and discuss the clinical signs that indicate good or poor recovery.</li> <li>• Discuss after-care of the mouse, including any special nursing care required, such as fluid replacement.</li> <li>• Describe the clinical signs associated with pain and state a suitable system for monitoring post-operatively.</li> <li>• Correctly update records, such as: cage label, unit daybook, medicine and other procedural records.</li> <li>• Discuss interpretation of records in determining the success of the anaesthetic and quality of recovery.</li> </ul>

**Example of an examination for a practical skill illustrating how each component can be marked**

**For each task, there will be a set of criteria against which the student will be assessed and a score allocated**

A maximum score can only be achieved if the trainee works independently and can describe and explain the task without inquiry by the examiner. The more he/she has to be asked the lower the achieved overall result.

***Assignment 1***

**Euthanasia and removal of tissues**

Your task is to euthanize a conscious mouse by cervical dislocation and to dissect the spleen and the left kidney for further analysis. Choose proper technique in line with animal welfare requirements.

<b>Task :</b>	<b>Percentage <sup>11</sup></b>	<b>Percentage achieved</b>	<b>To standard<sup>12</sup> YES - NO</b>
Preparation of work space	5		<input type="checkbox"/> <input type="checkbox"/>
Safe and humane handling of the animal – removing the animal from the cage/pen and transporting to procedure room +*	15		<input type="checkbox"/> <input type="checkbox"/>
Safe and humane restraint *	15		<input type="checkbox"/> <input type="checkbox"/>
Safe and humane euthanasia and confirmation of death*	30		<input type="checkbox"/> <input type="checkbox"/>
Dissection of organs	10		<input type="checkbox"/> <input type="checkbox"/>
Record keeping	10		<input type="checkbox"/> <input type="checkbox"/>
Cleaning of work space and tools used	5		<input type="checkbox"/> <input type="checkbox"/>
Disinfection	5		<input type="checkbox"/> <input type="checkbox"/>
Dispose of cadaver	5		<input type="checkbox"/> <input type="checkbox"/>
<b>Total</b>	<b>100%</b>		
<b>Comments</b>			

***\*Tasks marked with asterisks must be passed***

<sup>11</sup> Percentages are suggestions only. They may vary according to task and focus of evaluation.

<sup>12</sup> Trainee needs at least 6/7 checkmarks. Euthanasia must be performed competently.

## Assignment 2

### Intra-peritoneal injection

A hamster shall receive a dose of 100/mg/kg BW of substance X i.p. The concentration of substance X is 20mg/ml. Calculate the correct dose and inject the appropriate dose/amount i.p.

Level of expectation:	Percentage <sup>13</sup>	Percentage achieved
<b>Preparation of work space (15%):</b>		
Use of antiseptic hand rubs & antiseptics application solution		
Selection of the appropriate size of cannula/ needle/ syringe		
<b>Carrying out the procedure (60 %)</b>		
Safe and humane handling of the animal – removing the animal from the cage/pen, transporting to procedure room and return *		
Evaluation of health status		
Measure and record body weight		
<b>Calculation of dose &amp; appropriate volume (15%)</b>		
Filling syringe (air bubbles? volume?)		
Disinfection of injection site	YES NO	
Proper placement of needle, injection of material, and needle withdrawal *	YES NO	
<b>After completion of procedure (10%)</b>		
Cleaning of work space		
Documentation of procedure		
Overall safe working practice for animals & operator		
<b>Total</b>	100%	
<b>Comments</b>		

***\*Tasks marked with asterisks must be passed***

<sup>13</sup> Percentages are suggestions only. They may vary according to task and focus of evaluation.