Appendix I – Guidelines and Examples for Implementation of VVC

1) Changes to compounds or dosage of Anesthetic, Analgesic, Sedative, and/or Experimental Agents

1. Newly-requested agents must already have been approved by the IACUC in the same species and at approximately the same dosage in another relevant document such as:
    a. approved formularies
    b. approved veterinary SOPS
    c. IACUC policies (e.g., IACUC Policy: Analgesia in Research Animals)
2. Newly-requested compounds must not be known to be associated with adverse effects.
3. Newly-requested experimental agents that have a well-established NOEL (no observable effect level) in the same species and by the same route at or below the NOEL may be considered for VVC at veterinary discretion.
4. Limited to changes to agents that are pharmaceutical grade or to agents for which there is known to be no pharmaceutical grade available.
    a. For agents in which a pharmaceutical-grade option is available, but the requestor has scientific justification not to use it, the amendment should be routed for IACUC review.
    b. For non-pharmaceutical grade agents that are approved, diluents and vehicles should also be considered.

Examples of Anesthetic & Analgesic changes that would **NOT** be acceptable for VVC and should be referred for IACUC review include, but are not limited to:

- Changes in agent or dose that will increase anesthetic risk or decrease post-operative pain control
- Changes in agent or dose that will result in increased occupational health concerns
- Changes in agent or dose that require specialized training that has not been completed
- Addition of paralytics to procedures that did not previously include paralytics

2) Changes in Euthanasia to another AVMA-approved method

3) Changes to the timing, duration, frequency, type, and/or number of procedures performed when the procedure is already included in the approved protocol

1. Changes in timing of procedures (including tissue and body fluid collection, injections, noninvasive imaging, and training) and administration of agents (no anesthesia required) can be considered for VVC if the following conditions are met:
    a. Timing change is in accordance with other IACUC policies.
    b. Timing change does not increase the risk of pain and distress.
    c. Timing change does not result in increased restraint.
    d. Good professional judgment suggests that the proposed change will not cause harm to the animal.
2. Changes in procedures (including, but not limited to, tissue and body fluid collection, injections, noninvasive imaging, identification methods, and training) that do not require anesthesia can be considered for VVC with the following caveats:
    a. Changes in noninvasive methods of tissue and fluid collection (e.g., swabs, hair plucks) that will not change the degree of stress or discomfort the animal experiences, or potential for infection, can be considered for VVC.
    b. Changes in noninvasive procedures (see list above), that do not increase the stress or discomfort, restraint, or pain an animal experiences can be considered for VVC if in accordance with all other IACUC policies.
    c. Changes in types of behavioral tests in rodents cannot be considered for a VVC
3. Weaning variances can be approved by VVC if they are in accordance with the IACUC policy, Number of Mice Maintained in Breeding Cages.
4. Changes in experimental timeline (e.g., resulting from unanticipated delays) that do not negatively impact animal welfare and health.
5. Changing from survival to nonsurvival surgery.
6. Changes for procedures that include fasting and/or anesthesia may be considered for VVC provided that:
    a. At least one full day is present between overnight fasts (e.g., no consecutive overnight fasts).
    b. Several days are present between fasts that are longer than overnight (more than one missed feeding).
7. Changes in timing of anesthetic events may be considered if there is enough recovery such that there is no increased risk from morbidity associated with the change.
    a. Short anesthetic events (<1 hour from induction to full recovery) may be done as frequently as daily in some species provided there is not repeated fasting.
    b. Daily longer anesthetic events should be referred for IACUC review.

8. Increasing the total number of anesthetic events should be referred for IACUC review with the exception of changing from unanesthetized to anesthetized retro-orbital bleeding which can be considered for VVC.
9. Changes in duration of anesthetic events may be considered for VVC with the following caveats:
    a. The new duration does not significantly increase the risk to the patient (generally considered to be significant if the duration of anesthesia increases by more than 20% when the initial anesthesia is at least 90 minutes).
    b. Adding additional injectable anesthetic doses to rodents should be referred for IACUC review.
10. Removing anesthesia or sedation from an approved procedure if the anesthesia or sedation has been judged to not be needed (thus making the procedure less invasive) may be considered for VVC.

4) Changes in route or volume of administration

1. Changes in volume or route that meet the recommended volumes per site as noted in the DCM Guidelines for Anesthetic Dosages.
2. Changes in route of administration that will not increase the anticipated stress or pain the animals will experience may be considered for VVC .
3. Changes in route of administration that do not result in increased occupational health risks (if unsure, consult with occupational health or refer for IACUC review) may be considered for VVC.

Examples of Route changes that would generally be acceptable for VVC include, but are not limited to:

- Change from oral to IV if an IV catheter will already be in place
- Change from any injectable route to oral if voluntary consumption is likely
- Changing from IM to SQ if SQ is practical in the intended species
- Changing from SQ to IM in species where IM is more commonly used (e.g., pigs)

Examples of Route changes that would **NOT** be acceptable for VVC and should be referred for IACUC review include, but are not limited to:

- Changes to IM injections in rodents
- Changes to ID injections in rodents
- Changes to IP injections in non-rodents
- Changes in route that are likely to increase complication rate

- Changes in route that require additional training that has not yet been completed

5) **Other: Changes in Strain**

1. Protocol changes that meet the criteria outlined above and also contain strain changes may be considered for VVC as long as the change does not increase the required monitoring or increase the potential morbidity or mortality.
    a. For genetically modified animals, the veterinarian must consult with EHS to determine if review by EHS is needed; if yes, the veterinarian must refer the requested amendment for IACUC review.

6) **Changes for Personnel**

1. Protocol changes that meet the criteria outlined above and also contain personnel changes may be considered for VVC.
    a. Assigned veterinary consultant should have OAW staff process the personnel change, confirm the training, and then add a private comment in the electronic system (or add a comment to the verification form) that this has been done as part of the verification process.