1. Drinking bottle checking
   1.1. At the starting of a day’s shift, Laboratory Assistants/Attendants (LA) check the availability of water in the drinking bottle of every cage.
   1.2. Generally, if the water in a bottle is less than 100ml, the bottle will be changed. The decision will vary depending on the number of animals inside the cage and the time interval of the next working day with staff on duty.

2. Scheduled cage changing
   2.1. All cages on IVC racks in room 7311 are changed biweekly.
   2.2. Racks scheduled for changing are first completed by LAs before performing the spotted-cage change (section 3).
   2.3. Feed hopper is refilled on all cages being changed.
   2.4. Gross examination of the health condition of all animals is performed during cage-changing.
   2.5. Any animal health condition issue is reported to the technicians for more detailed investigation, and are reported to users according to SOP C-002 Special Observation Notifications.

3. Cage side examination and spot cage-changing
   3.1. While the LAs are changing cages on the scheduled racks, the technicians monitor every cage from the front, not to disturb the animals. If any anomaly is noted, the cages will be pulled out from the racks and observed closely using a red light torch or opened inside a Biological Safety Cabinet or Animal Transfer Station for further inspection.
   3.2. Animal well-being issues are reported and followed up as described in SOP C-002 Special Observation Notifications.
   3.3. All the other cages from racks not scheduled for that day’s change are checked to identify the ones needing cage-changing or feed refilling. (See the Appendix for the strategy of judgment on the need of changing and feed refilling)
3.4. The cages that are identified to be changed and refilled with feed are marked by a colored card inserted vertically in the cardholder.
3.5. LAs or technicians will both change the cages and refill the food hoppers on all the marked cages.

4. **Additional animal observation and caring**
   4.1. Once the technicians completed the cage-side observation, cage-changing, and identification of the cages that needs to be changed and refilled with feed, he/she will
   4.1.1. perform detailed animal health condition checks on animals known to have higher risk on health issues,
   4.1.2. check cages requiring accurate birth records, and
   4.1.3. provide additional care when requested (e.g. cages with a *Request Protocol Assistance Card*).

5. **Animal Euthanasia**
   5.1. Technician and trained LAs euthanize animals in cages marked with *Euthanasia Request Cards* by users, at the end of the morning or afternoon shift.

6. **Animal husbandry activities beyond the scheduled days**
   6.1. All Saturday and all public holidays have an APCF staff scheduled on duty.
   6.2. The staff on duty is required to check the availability of water and feed, and conduct general cage-side observation.
   6.3. Cage changing duties may be scheduled during long public holidays.
7. **Appendix (Responsibilities and target strategy)**

7.1. **General principle**

7.1.1. Cage, feed and drinking water is changed or refilled only when needed to minimize overconsumption of materials (sterilized cages and bottled water), manpower in changing and material processing, and equipment (i.e. autoclave) capacity.

7.1.2. A conservative judgment is applied to avoid any adverse consequence due to error of judgment.

7.2. **Responsibilities and target strategy**

7.2.1. The technicians are trained and have experience to make accurate judgment about the tolerable level of soiling in cages. On his/her daily checks, he/she asks the question “Can this be tolerated up to the next working day when a staff is available and performs regular cage change?” If the answer is “No”, he/she will have or assign the cage for changing. Factors that are considered in evaluating the soiled tolerance include the number and age of the animals inside, and the interval of the next working day. The “tolerable level” of soiling at anytime is that when all mice in a cage having sufficient unsoiled floor area to rest on (strategy B).

7.2.2. The cages that are not yet scheduled for that day/week’s change are only likely to be changed if the technicians’ assessment is intolerable.

7.2.3. For both the feed and drinking water, the technicians and the LAs can identify those need refilling or those could not last until the next working day. A conservative judgment is again applied.

7.2.4. Note: Tech and LA are not expected to spot/refill the cages when the resources are enough for consumption or until the next working day or even more (strategy C).

![Figure 1. General strategy in resource handlings (i.e. cage changing, water and feed filling) with the optimal use of available manpower, resources and risk. Note: the yellow line in Strategy B denotes the earlier replenish of resource before weekends/days without scheduled duty.](image-url)