Welfare Assessment Protocol for Shelter Dogs

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Index

1. Introduction ........................................................................................................... 5

2. Shelter Quality Protocol ...................................................................................... 9
   2.1 Contents ......................................................................................................... 9
   2.2 Methodology ................................................................................................. 11

3. Measures scored at SHELTER level ...................................................................15
   3.1 General information ...................................................................................... 15
   3.2 Social housing ............................................................................................... 16
   3.3 Exercise ......................................................................................................... 16
   3.4 Surgeries and control of pain ........................................................................16
   3.5 Mortality ........................................................................................................ 17
   3.6 Morbidity ....................................................................................................... 17
   3.7 Feeding ......................................................................................................... 18
   3.8 Emotional state ............................................................................................. 18

4. Measures scored at PEN level .............................................................................19
   4.1 Space allowance ............................................................................................ 19
   4.2 Bedding .......................................................................................................... 22
   4.3 Sharp edges ................................................................................................... 22
   4.4 Water supply ................................................................................................ 24
   4.5 Diarrhoea (Enteric disorders) ........................................................................25
   4.6 Thermal comfort ............................................................................................ 25
   4.7 Barking level ................................................................................................. 25
   4.8 Abnormal behaviour ..................................................................................... 26
   4.9 Evidence of pain ............................................................................................ 26

5. Measures scored at INDIVIDUAL level ...............................................................29
   5.1 Reaction toward human .............................................................................. 30
   5.2 Body condition ............................................................................................. 32
   5.3 Cleanliness of the animals ......................................................................... 32
   5.4 Skin condition .............................................................................................. 34
   5.5 Lameness ....................................................................................................... 36
   5.6 Coughing (respiratory disorders) ................................................................. 36

6. Sampling and practical information .....................................................................37
   6.1 Order to carry out the protocol .................................................................... 37
   Annex 1 - Management questionnaire ................................................................ 41
   Annex 2 - Resources Checklist at pen level ....................................................... 42
   Annex 3 - Behavioural observations at pen level .............................................. 43
   Annex 4 - Individual dog assessment ..................................................................44
   Annex 5 - Emotional State Profile ..................................................................... 45

7. Relevant references ............................................................................................. 47
The Shelter Quality protocol is a deliverable of the project ‘Tools for the assessment, classification and management of urban stray dog and cat populations’ (IZS AM 05/10 RC), coordinated by the Istituto Zooprofilattico Sperimentale dell’Abruzzo e del Molise ‘G. Caporale’ and financed by the Italian Ministry of Health.

The project aim was to develop innovative and efficient tools for the management of stray dog and cat populations in urban areas. A crucial topic, strictly related to stray dog population management, concerns shelter facilities. No-kill policies, now widely adopted by many legislators, lead to the proliferation of long-term sheltering for stray dogs in many countries. Gaps in the management systems and an imbalance between high numbers of dogs entering the shelter and low adoption rates, result in high percentages of animals that are likely to spend most part or all their life in a confined condition. In this scenario, animal welfare becomes a critical issue. On the other hand, where dogs are humanely destroyed if not adopted, a major effort has to be made to maximise successful adoptions. There is evidence that new owners prefer dogs that positively interact with
Introduction

people and that do not exhibit abnormal or undesirable behaviour. Dogs positively coping with their environment are also more likely to be rehomed. Therefore, improving the welfare of kennelled dogs helps not only to increase their well-being but also to increase their chances of adoption.

Previous works reported that the shelter environment can be detrimental for dogs, especially when housed for lengthy periods of time. Environment enrichment (both physical and social), as well as appropriate management procedures, can improve the animals' coping abilities and adaptation. Due to individual variability, dogs may perceive the same stressors differently, suggesting that animals could exhibit different behavioural responses when housed in similar conditions. It is therefore important to have a tool that allows a direct evaluation of the real welfare state of dogs housed in shelters, by observing their individual reaction to the environment they are kept in.

The Shelter Quality protocol was developed with the aim of providing a valid, reliable and practical tool for assessing dog welfare in long term shelters. This protocol was built around the four welfare principles (good feeding, good housing, good health and appropriate behaviour) described by the Welfare Quality® project for on-farm assessments of livestock species (Welfare Quality®, 2009). The emphasis is on animal-based measures (also called outcome or performance measures) in an attempt to estimate the actual welfare state of the animals in terms of, for instance, their behaviour, health or physical condition. Such measures have inherent advantages over management and resource-based measures (also referred to as input or design measures). Since welfare is a condition of the animal, animal-based measures are likely to be the most direct reflection of their welfare state. By applying this approach, the assessment system will be partially independent of the shelter facilities and management parameters.

The concepts of inputs and outcomes can also draw the basis for a risk assessment approach, as outlined by a recent EFSA scientific opinion on the use of animal-based measures to assess animal welfare (EFSA 2012). This analysis helps identifying the so called hazards, meaning those factors that could potentially impair the welfare of an animal. When measuring the animal responses to their environment, we are actually measuring the consequences of one or multiple factors that are acting upon that animal.

The link between hazards and consequences provides objective and scientific evidence of the predictive capacity of specific welfare measures.

Risk assessment also offers the basis to perform a risk management process, in order to define recommendations aimed at maximising dogs' quality of life in a shelter environment.

The Shelter Quality is an innovative protocol that proposes a completely new approach to companion animal welfare assessment. It has the potential of representing a precious tool for Competent Authorities, shelter managers and NGOs personnel wanting to investigate the welfare status of long-term sheltered dogs. The areas of application of the Shelter Quality protocol
are broad; it could help to identify critical areas needing intervention and might be used, in the future, as a reliable and scientific tool to rank rescue and commercial shelters according to the level of welfare they are providing to the housed dogs.

Scientific research is still on-going to identify areas of improvement of the protocol, to create the first database system for systematic recording of standard indicators and to generate new knowledge on the welfare of confined dogs.
2.1 Contents

Measures and procedures to assess the welfare of the domestic dog, were identified and selected following expert opinions and a thoughtful study of the available scientific literature on dog biology, health, welfare and behaviour. The protocol was validated through field testing, that evidenced its feasibility and reliability. The measures were selected to assess specific welfare criteria, reflecting management procedures (management-based measures), housing environment (resource-based measures) and direct welfare outcomes (animal-based measures). Choice relied on the feasibility of assessment considering both time and easiness of the measurement. A summary of all measures described in the protocol are included in Figure 1, with reference to the welfare criteria and principle they refer to.

Since welfare is the outcome of multi-factorial effects, multiple variables need to be
Figure 1. Welfare measures

Summary of the animal (red), management (yellow) and resource (green) based measures described in the protocol according to the welfare principles and criteria.

Welfare Principles

- Good feeding
  - Absence of prolonged hunger
  - Absence of prolonged thirst
  - Comfort around resting

- Good housing
  - Thermal comfort
  - Ease of movement
  - Absence of injuries

- Good health
  - Absence of disease
  - Absence of pain induced by management procedures
  - Expression of social behaviours

- Appropriate behaviour
  - Expression of other behaviours
  - Good human-animal relationship
  - Positive emotional state

Welfare Criteria

- Body condition
- Feeding
- Water supply
- Bedding Sharp edges
- Cleanliness
- Shivering Huddling Panting
- Space allowance
- Skin condition Lameness
- Evidence of pain Diarrhoea Coughing
- Mortality Morbidity
- Surgeries and control of pain
- Social housing
- Abnormal behaviour Barking
- Exercise
- Reaction to human
- Emotional state

Animal Welfare Assessment
considered when applying the protocol. The shelter evaluation will include three different levels of assessment:

Measures taken at shelter level (Chapter 3) refer to the overall dog population in the shelter. They include mainly management-based indicators (e.g. feeding regimen, exercise routine), and the emotional state profile (animal-based measure) to be recorded at the end of each shelter assessment.

Measures taken at pen level (Chapter 4) are assessed observing each housing environment and all the animals confined in it (irrespective of the number). Since assessing all pens in a shelter would be very time consuming, before starting the evaluation a sample of pens will be randomly chosen by the assessor. Parameters measured at pen level are both resource-based (e.g. space allowance, bedding) and animal-based (e.g. behaviour, diarrhoea).

Measures taken at individual level (Chapter 4) are assessed observing each individual animal. All measures are animal-based and include health parameters and the human-animal relationship score. Assessments at individual level will be applied to a sub-sample of the dogs housed in the pre-selected pens.

This protocol contains methodological information on how to carry out the assessments, a description of all selected measures including the welfare criteria they apply to, the type (animal, resource, management), what the assessor needs to record during the visit to the shelter, scoring indication useful for future analysis, and finally some examples. A list of references relevant to the study is also included at the end of the document.

2.2 Methodology

Start of assessment
The assessment starts when the assessor positions in front of the first pen and starts recording.

End of assessment
The assessment ends when the assessor finishes recording the last pen.

Scoring levels
Measures will be taken according to three scoring levels:

- **Shelter**: the measure is recorded evaluating the shelter as a unit.
- **Pen**: the measure is recorded evaluating each pen as a unit and observing all the animals confined in it (irrespective of the number of animals)
- **Individual**: the measure is recorded evaluating each animal as a unit.

Shelter routine
Since dogs have to be assessed while housed in their home pen, before planning your visit to the shelter check the daily routines with the manager, also try to avoid interfering with staff work.

Sample size indications

- Include in the sample only dogs over 6 months of age and that have been in the shelter for two months or more.
- According to the total number of dogs housed, the sample of animals to be
**Table 1. Sample size**

<table>
<thead>
<tr>
<th>Total number of housed dogs</th>
<th>Number of animals to assess</th>
</tr>
</thead>
<tbody>
<tr>
<td>up to 59</td>
<td>30</td>
</tr>
<tr>
<td>60-89</td>
<td>40</td>
</tr>
<tr>
<td>90-139</td>
<td>50</td>
</tr>
<tr>
<td>140 over</td>
<td>60</td>
</tr>
</tbody>
</table>

assessed will vary according to Table 1. Hospitalized dogs will not be included in the assessment and therefore they will not be considered when calculating the sample size.

- Remember that the sampling should be in a random form: only assess a maximum of three dogs per pen and the pens you select should cover the different facilities in the shelter and the different range of ages. Twenty is the maximum number of pens suggested for a feasible assessment in terms of time. The assessment of the shelter should be carried out on a single day.

- Box 1 shows a practical example of how an assessor can chose the pens on a random form starting from the map of the facility.

**Behaviour of the observer during assessment**

The assessor should stand in front of the pen, 2 meters from the fence, still, passive, making no loud noise and not interacting with the animals unless required by the protocol. When interacting with the animal, the assessor should keep a neutral, relaxed posture, if the animal is showing excessive fear or distress the assessor should interrupt the assessment. Get everything ready for scoring before positioning in front of the pen. When the number of animals housed together exceeds 5, or when the pen is large and animals are hardly visible, the assessor may enter the pen and carry out the assessment from inside.

Procedures have to be followed as described, however people and dogs’ SAFETY has to be a priority.

**Assessment kit**

Scoring sheets, clipboard, stop-watch, pen, tape meter. Do not wear dark hats or sunglasses.

**Annexes**

At the end of this protocol, a questionnaire for the shelter manager and practical record forms to print for data collection, are included.
Box 1. Example of a random selection of pens to carry out before starting the assessment of a shelter

If this shelter hosts 300 dogs housed in four different modules of pens, according to Table 1 60 dogs should be assessed. Twenty is the maximum suggested number of pens to assess (3 dogs per pen). A random selection of pens should include all modules, in a balanced order: 20 pens/4 modules = 5 pens to assess per module. The map shows a possible correct sampling to be carried out before starting the evaluation. If a copy of the map of the facility is no available, the assessor can do a sketch on paper.

Courtesy of Safe the Dogs and Other Animals Onlus
This chapter includes the description of all measures to be recorded considering the shelter as a unit. Most measures are management-based, and should therefore be recorded with the help of the shelter manager (or other competent person) by compiling the Management Questionnaire in Annex 1. Furthermore, at the end of the assessment, the assessor will evaluate the emotional state of all observed animals compiling the Emotional State Profile (Annex 5).

3.1 General information

Description Before starting the assessment, general information about the shelter must be recorded. A copy of the shelter map or a sketch of the facility layout will help the assessor identifying the pens to be assessed.
Measures scored at SHELTER level

What to record
- Name of the assessor carrying out the evaluation
- Day of assessment
- Shelter identification or name
- Number of dogs in the shelter the day of the visit (excluding hospitalised animals)
- Number of hospitalised animals the day of the visit
- Temperature (°C) and humidity (%) the day of the visit

3.3 Exercise
Type of measure Management based
Welfare criteria Expression of other behaviours
Description Small enclosures not only discourage exercise because there is no possibility of travelling to another location, but they also restrict the type of locomotion and the ability of dogs to control their social interactions and express natural specie-specific behaviour. The assessor will ask the manager of the shelter about dogs outdoor access and exercising.
What to record
- Name of the assessor carrying out the evaluation
- Day of assessment
- Shelter identification or name
- Number of dogs in the shelter the day of the visit (excluding hospitalised animals)
- Number of hospitalised animals the day of the visit
- Temperature (°C) and humidity (%) the day of the visit

3.2 Social housing
Type of measure Management based
Welfare criteria Expression of social behaviour
Description Dogs are social animals and there is evidence that isolation is detrimental for their welfare. Therefore, single housing should be avoided especially when dealing with long-term confinement. Isolation is acceptable when needed for clinical or safety reasons, but should be reduced at a minimum. The assessor will record the overall number of pens in the shelter housing dogs individually, in pair or in group (less than or equal to 5 or over 5 dogs) the day of the visit.
What to record
- Number of single housing pen
- Number of pair housing pen
- Number of group (≤ 5) housing pen
- Number of group (> 5) housing pen
- Total number of pens
Scoring indications Percentages of each type of housing at the shelter (%).

3.4 Surgeries and control of pain
Type of measure Management based
Welfare criteria Absence of pain induced by management procedures
Description Surgeries include sterilisation, castration and other clinical manipulations. After clinical intervention, dogs may suffer from pain associated with actual or potential tissue damage.
To reduce pain, analgesic intervention might be needed. The shelter manager is asked about post-surgical monitoring.

**What to record**
- Presence of operating procedures for post-surgical monitoring (Y/N)
- Presence of hospital pens (Y/N)
- Presence of protocols of analgesia (Y/N)

### 3.5 Mortality

**Type of measure** Management based

**Welfare criteria** Absence of disease

**Description:** Mortality is defined as the number of animal deaths in a defined period of time over the total shelter population. Death can occur with or without euthanasia procedure. If available, the assessor should analyse data from shelter records.

**What to record**
- Number of euthanasia because of health problems during the last 12 months
- Number of euthanasia because of behaviour problems during the last 12 months
- Number of deaths (other than euthanasia) during the last 12 months
- Dog shelter population (mean number of animals in the last 12 months)

**Scoring indications** Mortality per each category (Number of dogs that died during the last 12 months/dog shelter population) * 100

### 3.6 Morbidity

**Type of measure** Management based

**Welfare criteria** Absence of disease

**Description** Morbidity is the incidence of a disease or of all disease in a population. Since it is difficult to retrieve this information, the manager will be asked on average expenses for medical treatments per dog, including preventive medicine and disease treatments but not sterilization expenses.

**What to record**
- Total expenses for medical treatments in the last 12 months

**Scoring indications** Average medical expenses per dog per year (expenses for medical treatments in the last 12 months/dog shelter population)

### 3.7 Feeding

**Type of measure** Management based

**Welfare criteria** Absence of prolonged hunger

**Description** Food with sufficient nutritional value will allow an animal to be healthy and maintain a normal body weight. Diet-specific factors include the safety and appropriateness of the diet fed to the animals. Feeding regimen include the frequency, timing and method of feeding. Information about animal nutrition will be recorded.

**What to record**
- Type of diet (e.g. dry pellets, cooked food, wet/canned food)
- Special diets for puppies/old animals/hospitalised animals (Y/N)
- Feeding regime (once per day/twice per day/ad libitum).
Measures scored at SHELTER level

3.8 Emotional state

Type of measure Animal based

Welfare criteria Positive emotional state

Description Emotional state focus not so much on what an animal does, but on how it does it, that is, its dynamic style of interaction with the environment.

After assessing all sampled pens, the assessor will take a few seconds to describe the shelter, using Visual Analogue Scales (VAS), quantifying how much an adjective represents the animals housed in that shelter. The adjectives are the following:

<table>
<thead>
<tr>
<th>Adjective</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Playful</td>
<td>cheerful, high spirits, fun, showing play-related behaviour, inviting others to play</td>
</tr>
<tr>
<td>Happy</td>
<td>content, pleased, not easy to upset, fits well in its environment</td>
</tr>
<tr>
<td>Friendly</td>
<td>sociable toward humans and other dogs, seeks for contact/interaction, shows greeting behaviour</td>
</tr>
<tr>
<td>Confident</td>
<td>sure, has good control on its environment, handles stress well, fearless</td>
</tr>
<tr>
<td>Nervous</td>
<td>uneasy, apprehensive, highly excitable, shows fast arousal, unsettled</td>
</tr>
<tr>
<td>Unsure</td>
<td>unsecure, doubtful, hesitant, likely to show conflicting behaviour</td>
</tr>
<tr>
<td>Anxious</td>
<td>worried, unable so settle or cope with its environment, signs of distress</td>
</tr>
<tr>
<td>Alert</td>
<td>vigilant, inquisitive, attentive to outside stimuli</td>
</tr>
<tr>
<td>Boisterous</td>
<td>noisy, bouncy, drives attention, unrestrained, excessive barking</td>
</tr>
<tr>
<td>Attention-seeking</td>
<td>attracts the attention of humans, looks for an interaction, calls, most of the time in front of fence (nearer to assessor)</td>
</tr>
<tr>
<td>Quiet</td>
<td>silent, unresponsive, vaguely depressed, unwilling to interact with its environment</td>
</tr>
<tr>
<td>Relaxed</td>
<td>calm, without worries, easy going, settled in its environment</td>
</tr>
</tbody>
</table>

What to record

Using a Visual Analogue Scale (VAS), record how much each adjective describes the animals hosted in the shelter that the assessor just evaluated.

Each VAS is defined by its left 'minimum' (Min) and right 'maximum' (Max) point.

- Min means that the expressive quality indicated by the term is entirely absent in any of the animals you have seen.
- Max means that this expressive quality is dominant across all observed animals.

Note that it is possible to give more than one term a max score; animal could for example be both entirely playful and entirely friendly.

To score each term, draw a line across the 125 mm scale at the appropriate point. Do not skip any term.

Scoring indications The measure for each adjective is the distance in millimetres from the min point to the point where the line crosses the scale.

e.g. Playful

Min. ____________________________ Max.
4 Measures scored at PEN level

All pens, housing one or more of the dogs included in the sample, must be scored for the following animal and resource based measures. When arriving in front of the pen, a Resource Checklist (Annex 2) will be filled-in while giving the dogs the time to accustom to your presence. Subsequently, all dogs inside the pen will be observed for one minute and animal based measures will be scored (Behavioural Observations - Annex 3). Annex 3 includes also two health measures that have to be scored at pen level (i.e. diarrhoea, evidence of pain).

4.1 Space allowance
Type of measure Resource based
Welfare criteria Ease of movement
When measuring the pen, all available space will be considered (indoor and outdoor), whenever the dog has constant and free access to both areas.

**What to record**

- Enclosure length and width (m)
- Number of animal in the pen up to 20kg
- Number of animal in the pen over 20kg
- Presence of indoor closed area (Y/N)
- Presence of an outside area (Y/N)

**Scoring indications**

Enclosure area in m² (= length x width)

Pen is adequate/inadequate for the number and weight of dogs according to Table 2.

### Table 2. Minimum enclosure size requirements

These dimensions are acceptable only if animals have access to outside runs and/or daily exercise.

<table>
<thead>
<tr>
<th>Weight (Kg)</th>
<th>Minimum enclosure size for one or two animals (m²)</th>
<th>For each additional animal add a minimum of (m²)</th>
<th>Minimum height (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 20</td>
<td>4</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Over 20</td>
<td>8</td>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>
### Box 2. Examples of space allowance recording system

**PEN ID: Example 1**

- **Dimension**
  - Length: 2 m
  - Width: 8 m

- **N°animals <20kg**: 0

- **N°animals >20kg**: 4

- **Indoor area**: Yes

- **Outside area**: Yes

**Scoring indications**

- Enclosure area = 16 m²
- Pen is adequate

**PEN ID: Example 2**

- **Dimension**
  - Length: 3 m
  - Width: 3 m

- **N°animals <20kg**: 1

- **N°animals >20kg**: 1

- **Indoor area**: Yes

- **Outside area**: Yes

**Scoring indications**

- Enclosure area = 9 m²
- Pen is adequate

**PEN ID: Example 3**

- **Dimension**
  - Length: 4 m
  - Width: 3.5 m

- **N°animals <20kg**: 8

- **N°animals >20kg**: 2

- **Indoor area**: Yes

- **Outside area**: No

**Scoring indications**

- Enclosure area = 14 m²
- Pen is inadequate

---

<table>
<thead>
<tr>
<th>What to record</th>
<th>EX 1</th>
<th>EX 2</th>
<th>EX 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pen ID</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Dimension</strong></td>
<td>Length 2 m Width 8 m</td>
<td>Length 3 m Width 3 m</td>
<td>Length 4 m Width 3.5 m</td>
</tr>
<tr>
<td><strong>N°animals &lt;20kg</strong></td>
<td>0</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td><strong>N°animals &gt;20kg</strong></td>
<td>4</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><strong>Indoor area</strong></td>
<td>Yes / No</td>
<td>Yes / No</td>
<td>Yes / No</td>
</tr>
<tr>
<td><strong>Outside area</strong></td>
<td>Yes / No</td>
<td>Yes / No</td>
<td>Yes / No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scoring indications</th>
<th>Example 1</th>
<th>Example 2</th>
<th>Example 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enclosure area</td>
<td>= 16 m²</td>
<td>= 9 m²</td>
<td>= 14 m²</td>
</tr>
<tr>
<td>Minimum enclosure size requirement</td>
<td>= 16 m²</td>
<td>= 8 m²</td>
<td>= 24 m²</td>
</tr>
<tr>
<td>Pen is adequate</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>
4.2 Bedding

**Type of measure** Resource based

**Welfare criteria** Comfort around resting

**Description** All dogs should be provided with a warm, dry, draught-free area to ensure sufficient comfort during resting and sleeping. Ideally, bedding should be off the ground, permit to readily clean and disinfect the enclosure, and be safe (i.e. no harmful edges, no ingestible parts or filling). Assess the presence and type of bedding material available in each enclosure.

Bedding type can be extremely various, please refer to the following categories: kennel (close movable shelter, often of plastic or wood, it repairs from mild adverse weather condition, it allows the animal to hide), basket (isolate from the ground, open on the top, usually of plastic), other (includes fabric, matrass, carpet, any solution not listed). If no bedding is present, don’t score the bedding type, tick the box absent when scoring the bedding condition.

The assessor will record if the bedding is adequate or inadequate: bedding will be considered inadequate if there is less than one bed per dog, if it can be harmful, if bedding material is wet or with faeces.

**What to record**
- Type of bedding (kennel/basket/other)
- Condition of bedding material (absent/adequate/inadequate)

4.3 Sharp edges

**Type of measure** Resource based

**Welfare criteria** Comfort around resting

**Description** The assessor looks for the presence of sharp edges or protrusions inside the pen (i.e. in walls, partitions, floor) or along the fence, that could be harmful for the animals.

**What to record**
- Presence of sharp edges (Y/N)
**Box 3. Examples of bedding recording system**

<table>
<thead>
<tr>
<th>Pen ID</th>
<th>EX 1</th>
<th>EX 2</th>
<th>EX 3</th>
<th>EX 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bedding type</strong></td>
<td>shelter</td>
<td>shelter</td>
<td>shelter</td>
<td>shelter</td>
</tr>
<tr>
<td></td>
<td>basket</td>
<td>basket</td>
<td>basket</td>
<td>basket</td>
</tr>
<tr>
<td></td>
<td>other</td>
<td>other</td>
<td>other</td>
<td>other</td>
</tr>
<tr>
<td><strong>Bedding</strong></td>
<td>adeq</td>
<td>adeq</td>
<td>adeq</td>
<td>adeq</td>
</tr>
<tr>
<td></td>
<td>inadeq</td>
<td>inadeq</td>
<td>inadeq</td>
<td>inadeq</td>
</tr>
<tr>
<td></td>
<td>absent</td>
<td>absent</td>
<td>absent</td>
<td>absent</td>
</tr>
</tbody>
</table>
and functioning: if the containers (e.g. bowl, bucket) are filled manually by shelter staff, the assessor will consider them functioning if they are full, and not functioning if they are empty at the moment of the assessment.

**Box 4. Examples of sharp edges recording system**

<table>
<thead>
<tr>
<th>PEN ID: Example 1</th>
<th>PEN ID: Example 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Example 1" /></td>
<td><img src="image" alt="Example 2" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PEN ID: Example 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Example 3" /></td>
</tr>
</tbody>
</table>

**What to record**

<table>
<thead>
<tr>
<th>Pen ID</th>
<th>EX 1</th>
<th>EX 2</th>
<th>EX 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sharp edges</td>
<td>☑ yes / ☐ no</td>
<td>☑ yes / ☐ no</td>
<td>☐ yes / ☐ no</td>
</tr>
</tbody>
</table>

**4.4 Water supply**

**Type of measure** Resource based

**Welfare criteria** Absence of prolonged thirst

**Description** Water supply will be considered hygienic when the drinker places are without faeces and without mould. The drinkers should be safe (e.g. no sharp edges, no rusty areas) and functioning: if the containers (e.g. bowl, bucket) are filled manually by shelter staff, the assessor will consider them functioning if they are full, and not functioning if they are empty at the moment of the assessment.

The assessor will record the type of drinker, if they are functioning or not and
the cleanliness of the water. In addition, the risk of injuries due to drinkers will be checked. Water facilities will be considered adequate if drinkers are functioning, clean and safe, if one of these is negative, the score will be inadequate.

**What to record**
- Type of drinkers (i.e. bowl, trough, bucket, nipple, automatic fountain, other)
- Drinkers are functioning (Y/N)
- Water is clean (Y/N)
- Drinkers are safe (Y/N)

**Scoring indications**
- Water facilities are adequate/inadequate
- Water is clean

### 4.5 Diarrhoea (Enteric disorders)

**Type of measure** Animal based

**Welfare criteria** Absence of disease

**Description** Diarrhoea can be an indicator of enteric disorders. It is defined as the passage of faeces that contain excessive amounts of water, the stool liquid to various degrees. When group housed, the presence of diarrhoea cannot be associated to an individual dog. Thus, the assessor will record the presence of diarrhoea (liquid manure) in the pen.

**What to record**
- Presence of visible liquid manure in the pen (Y/N)

**Scoring indications** Proportion of pens with evidences of diarrhoea on the total assessed in shelter (%).

### 4.6 Thermal comfort

**Type of measure** Animal based

**Welfare criteria** Thermal comfort

**Description Panting**: dog pants for physical exertion when ambient temperature is warm. **Shivering**: it is a physical response to cold, especially if associated to huddling.

The assessor will stand 2 meters from the fence for 1 minute without interacting with the dogs, and then will record the observed behaviour. Each behavioural parameter can be defined as follows:

- **Panting**: increased frequency of inhalation and exhalation in combination with the opening of the mouth
- **Shivering**: a clear trembling of the body
- **Huddling**: two or more animals resting in close contact or on top one with another

**What to record**
- Number of animals panting per pen
- Number of animals shivering/huddling per pen

**Scoring indications** Proportion of animals panting, shivering or huddling on the total assessments in the shelter (%).

### 4.7 Barking level

**Type of measure** Animal based

**Welfare criteria** Expression of other behaviours

**Description** Noise levels in dog shelters may cause hearing damage and public disturbance. Bark can be defined as a staccato, short vocalisation. The assessor will record the number of dogs barking when arriving in front of each pen, after
Measures scored at PEN level

1 minute of observation. Furthermore, after assessing all pens, the assessor will record barking level using a visual analogue scale (VAS, see section 3.8 for scoring procedure).

What to record
- Number of dogs barking during one minute observation (only in the observed pen).
- Perceived noise level in the shelter (VAS) when scoring emotional state (Annex 5)

Scoring indications
- Proportion of dogs barking over the total assessments in the shelter (%).
- Barking level in the shelter using the VAS scoring

4.8 Abnormal behaviour

Type of measure Animal based
Welfare criteria Expression of other behaviours
Description Confinement in a rescue shelter can result in a situation of unpredictability for the dog, often causing fear and stress in the short term. Abnormal behaviour in the dog may take the form of a reduced behavioural repertoire and/or the development of stereotypies defined as repetitive, unvarying and apparently functionless behaviour patterns. Such expression may indicate poor welfare and increase the likelihood of injury or susceptibility to disease. While completing the assessment of each pen unit, the assessor will record if any abnormal behaviour was observed. Abnormal behavioural patterns can be defined as follows:

ACTIVE REPETITIVE
- Circle: repetitive, unvaried circling around pen, or walking in small circles.
- Pace: repetitive pacing, in a fixed route, usually along a fence
- Whirling: repetitive turning around and chasing tail
- Wall bounce: repetitive jumping at wall, rebounding off it

OTHER COMPULSIVE BEHAVIOUR
- Self-mutilation: caused by repetitive grooming or self-biting, can cause visible skin lesions
- Environment related: compulsive licking ground or licking/chewing fence, bedding or other object in a compulsive way, or uninterrupted digging/scratching

What to record
- Presence/absence of dogs showing active repetitive or other compulsive behaviour.

Scoring indications
- Proportion of dogs barking over the total assessments in the shelter (%).
- Barking level in the shelter using the VAS scoring

4.9 Evidence of pain

Type of measure Animal based
Welfare criteria Absence of disease
Description Pain has been defined as an unpleasant sensory and emotional experience. Animals that suffer and are in pain may appear depressed and non-responsive to surrounding, remaining quiet on a recumbent position, avoiding contact, or growling as an unfamiliar person approaches. The assessor should
check for animals showing signs of discomfort or pain inside the pen.

**What to record**
- Number of dogs showing sign of discomfort or pain.

**Scoring indications** Proportion of animals in pain over the total assessed in the shelter (%).

---

**Box 5. Examples of evidence of pain recording system**

**PEN ID: Example 1**

<table>
<thead>
<tr>
<th>Pen ID</th>
<th>EX 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nº animals in pain</td>
<td>1</td>
</tr>
</tbody>
</table>

---
A sample of dogs will be selected to assess human-animal relationship and general physical conditions.

The assessment is carried out observing one animal at the time by standing outside the pen, next to the fence. When the number of animals housed together exceeds 5, or when the pen is large and animals are hardly visible, the assessor may enter the pen and carry out the assessment from inside. Shelter staff should allow the entrance to a pen, according to the dogs' level of sociability, safety of animals and people has to be a priority. If an animal is showing excessive signs of fear, to avoid unnecessary stress, do not force contact.

Animals assessed within one pen should be sampled in a random order.

Suggestion: when in front of the pen, chose one animal at the front, one in the middle and one in the rear. If all animals come next to the fence assess one from your right one of the middle and one on your left. Select all subjects before starting the assessment.
Measures scored at INDIVIDUAL level

**Age category** of the assessed animal will be estimated considering: young (6 months-2 years old), adult (3 years-6 years old) and geriatric (over 7 years old) dogs.

Measures assessed at individual level are included in Annex 4.

### 5.1 Reaction toward human

**Type of measure** Animal based

**Welfare criteria** Good human-animal relationship

**Description** Fear and aggression are among the most common behavioural problem that impair interaction between dogs and human beings, thereby representing a failure in communication between the two species, also decreasing chances of adoption. In presence of an unfamiliar person the dog can show:

0. No signs of fear or aggression (decreasing

---

#### Table 3. Description of a dog typical behaviour and posture according to the test response

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-no signs</td>
<td>No signs of fear or aggression, posture is neutral, relaxed looking at or ignoring the assessor, or friendly/sociable, decreasing distances and/or greeting the assessor.</td>
</tr>
<tr>
<td>1-fear</td>
<td>Signs of fear, associated to low or very low postures, often increasing distances or hiding from assessor, ears back, eye contact brief and indirect, tail hangs low or tucked between legs.</td>
</tr>
<tr>
<td>2-defensive aggression</td>
<td>Sign of fear and of defensive aggression, body lowered, weight over rear legs, tail down tense or tucked between legs, hackles raised, ears back, pupils dilated, muzzle tense, nose wrinkled, snarled teeth exposed.</td>
</tr>
<tr>
<td>3-offensive aggression</td>
<td>Signs of aggression, weight forward, tail stiff, raised, ears erect forward, bared teeth and lips curled, eyes staring, hackles may be up.</td>
</tr>
</tbody>
</table>
distances, friendly/sociable or neutral)
1. Fear without signs of aggressions (shows low or very low postures)
2. Fear with signs of aggression (defensive posture)
3. Aggression without signs of fear (offensive posture)

Postures and behavioural patterns typical of the above reactions are described in Table 3.

The assessor will approach the fence of the pen and record the dog reaction during a short test situations:
1. In front of fence, standing and ignoring the dog for 30 seconds (Figure 2.a)
2. In front of fence, crouched and talking gently to the dog for 30 seconds (Figure 2.b)

If the assessor has to enter the pen, the test procedure will be the same: standing and ignoring the dog for 30 seconds, crouching and talking to the dog gently for another 30 seconds.

The animal and the assessor’s safety are a priority, do not enter the pen if a dog is showing aggressive signs.

What to record
- Record if the dog shows any fearful and/or aggressive reactions during the test (score 0-3)

**Scoring indications** Proportion of dogs in the shelter showing fear/aggression toward an unfamiliar person.

---

**Figure 2. Reaction toward human, short test situation**

Behaviour of the assessor when carrying out the short test to score the dog’s reaction toward humans: step 1 (A) standing and ignoring the dog for 30 seconds, step 2 (B) crouched and talking gently to the dog for 30 seconds.
5.2 Body condition

Type of measure Animal based

Welfare criteria Absence of prolonged hunger

Description Food intake should allow an animal to maintain normal body weight, and meet the normal daily requirements to keep dogs fit and healthy.

The ideal situation is for the assessor not to touch the animals. The score should be only visual. For the purposes of this welfare assessment, the ability to detect animals which are at an inappropriate condition is the main objective. Thus a simple classification of too thin, adequate and too heavy will suffice. Use the body condition system below.

What to record

The animal body condition score (BCS) is:

- Too thin
- Adequate
- Too heavy

If it is not possible to assess it because of the fur of the dog leave blank.

Scoring indications Proportion of dogs in the shelter showing an inappropriate (too thin or too heavy) BCS (%)

5.3 Cleanliness of the animals

Type of measure Animal based

Welfare criteria Comfort around resting

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Too thin</td>
<td>Bones easily visible (i.e. ribs, pelvis, lumbar vertebrae); loss of muscle mass, obvious waist and abdominal tuck.</td>
</tr>
<tr>
<td>Adequate</td>
<td>No excess of fat covering; observable waist when viewed from above, abdominal tuck when viewed from side.</td>
</tr>
<tr>
<td>Too heavy</td>
<td>Excessive fat cover, ribs not palpable; fat deposit on neck and limbs; waist absents and abdominal distension present.</td>
</tr>
</tbody>
</table>
What to record

- The animal is clean
- The animal is dirty/wet (separate or continuous splashing or wet areas)

Scoring indications: Proportion of dogs in the shelter showing dirty or wet areas (%)
SWELLING is a transient abnormal enlargement of a body part or area, can be due by local infections/abscesses. Assess the presence of visible swelling areas.

ECTOPARASITES Dogs are susceptible to several parasites. Common ectoparasites, as ticks, mites and fleas, can serve as vector for several infectious agents including zoonotic ones, being of relevant interest from both a medical and veterinary point of view. Diverse and effective prophylactic and therapeutic treatments can be planned in shelters to minimise infestation. A high number of animals recorded with visible ectoparasites, or skin damage due to their infestation, can be an indicator of an inadequate care of the dogs, and of poor welfare. Ticks (particularly feeding adults), fleas and their faeces can be easily spotted

---

5.4 Skin condition

**Type of measure** Animal based

**Welfare criteria** Absence of injuries

**Description** The evidence of hair loss, skin lesions and abnormal swelling or signs of inflammatory reaction, irritation such as scratching, biting or licking are indicator of poor welfare and may be related to the enclosure but also to health problems.

**WOUNDS** including when skin is torn, cut or punctured (an open wound), here we include lick dermatitis. Count both scratches (surface penetration of the epidermis) and wounds (penetration of the muscle tissue). Wounds will be scored only if bleeding or if larger than 2 cm. Healed wounds will not be assessed.

**HAIR LOSS** Normally covers extensive areas with no fur. Assess the presence of hair loss areas, including dermatitis.

---

**Box 7. Examples of cleanliness of the animal recording system**

<table>
<thead>
<tr>
<th>Pen ID</th>
<th>EX 1</th>
<th>EX 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cleanliness</td>
<td>☒ clean</td>
<td>☒ clean</td>
</tr>
<tr>
<td>Dirty/wet</td>
<td>☐ dirty/wet</td>
<td>☐ dirty/wet</td>
</tr>
</tbody>
</table>
by observing the dog. Flea and mite infestation is also associated with the dog showing frequent itching.

**Remember** Skin condition is assessed by the observation of ONE SIDE of the dog’s body; a wound smaller than 2 cm and/or healed will not be assessed.

**What to record**
- Presence of visible wounds
- Presence of hair loss areas
- Presence of visible swelling areas
- Evidences of ectoparasites (Y/N)

If the dog does not present skin issues, leave blank.

**Scoring indications** Proportion of dogs in the shelter showing altered skin condition over the total number of assessed dogs (%)

---

**Box 8. Examples of skin condition recording system**

<table>
<thead>
<tr>
<th>PEN ID: Example 1</th>
<th>PEN ID: Example 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Image 1]</td>
<td>![Image 2]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PEN ID: Example 3</th>
<th>PEN ID: Example 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Image 3]</td>
<td>![Image 4]</td>
</tr>
</tbody>
</table>

---

<table>
<thead>
<tr>
<th>What to record</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Skin condition</strong></td>
</tr>
<tr>
<td>![Image 5] wounds</td>
</tr>
<tr>
<td>![Image 7] hair loss</td>
</tr>
<tr>
<td>![Image 9] swelling</td>
</tr>
<tr>
<td>![Image 11] ectoparasites</td>
</tr>
<tr>
<td>![Image 13] wounds</td>
</tr>
<tr>
<td>![Image 15] hair loss</td>
</tr>
<tr>
<td>![Image 17] swelling</td>
</tr>
<tr>
<td>![Image 19] ectoparasites</td>
</tr>
</tbody>
</table>
5.5 Lameness
Type of measure Animal based
Welfare criteria Absence of injuries
Description Lameness is the inability to use one or more limbs in a normal manner. The observation of lameness could suggest the presence of foot wounds or other painful disease. A dog with a surgically amputated leg receive a score of 1. The dogs are observed while walking.
What to record
0- the animal shows no lameness
1- the animal is lame but is still walking
2- the dog is severely lame, almost or completely unable to walk
If the assessor is not able to observe the animal standing and walking, leave blank.
Scoring indications
Proportion of lame animals on the total assessed in shelter (%)

Box 9. Examples of lameness recording system

<table>
<thead>
<tr>
<th>PEN ID: Example 1</th>
<th>PEN ID: Example 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Example 1" /></td>
<td><img src="image2" alt="Example 2" /></td>
</tr>
</tbody>
</table>

What to record

<table>
<thead>
<tr>
<th>Pen ID</th>
<th>EX 1</th>
<th>EX 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lameness</td>
<td>□ 0</td>
<td>□ 1</td>
</tr>
<tr>
<td></td>
<td>□ 0</td>
<td>□ 1</td>
</tr>
</tbody>
</table>

5.6 Coughing (respiratory disorders)
Type of measure Animal based
Welfare criteria Absence of disease
Description Cough is a sudden and often repetitively occurring reflex which helps to clear the large breathing passages from secretions, irritants, foreign particles and microbes. Dogs must be observed during 2 minutes.
What to record
• Evidences of coughing (Y/N)
Scoring indications
Proportion of coughing animals on the total assessed in shelter (%)
The following section includes practical record forms that can be printed and compiled by the assessors during shelter visits. To help the user in the preparation process, a scheme of the order to follow when carrying out the assessment is supplied. A summary of the measures included in the 5 record forms (Annexes 1 to 5) and approximate estimated time to carry out the assessments are also presented in Table 4.

6.1 Order to carry out the protocol

1. Contact the manager of the shelter to explain the aim of your visit and to make an appointment. Take also the chance to ask the number of animals hosted at the time, this will allow you estimate the number of animals you will have to assess (according to Table 1) and prepare a sufficient number of record forms. In addition, ask him/her availability to retrieve some data from the shelter records (e.g. mortality, total
expenses for medical treatments), you can send an e-mail with the information required, saving time at the moment of the visit.

2. Once at the shelter, take the Management questionnaire (Annex 1) and start filling the General information section. If the manager (or other competent person) is available, compile the remaining sections of Annex 1. Ask for a copy of the map of the facility; if it is not available, draw the map yourself, either copying an existing map, or giving a quick tour of the facility and sketching the location and modules of pens you see.

3. Take a few minutes to define the number of pens and their random location around the shelter (as explained in Box 1), and how many animals within each pen (from 1 to 3) you need to assess. Get everything ready for the assessment (clip-board, pen, stop watch, scoring sheets in the correct order) and record the starting time (bottom of Annex 1).

4. Place yourself in front (2 meters from the fence) of the first selected pen and visually choose the subjects of that pen to be assessed later at individual level. Then, start recording the information of the Resource checklist (Annex 2). Parameters that cannot be scored from outside (e.g. space allowance) can be scored later on by entering the pen.

5. Without changing position, take the Behavioural observation form (Annex 3) and observe all the animals in that pen for 1 minute. At the end of the minute, score all the measures except 'abnormal behaviour' that will be assessed later.

6. Now start observing the chosen dogs, one at the time. Per each dog, compile information included in the Individual assessment form (Annex 4). To score the fear/agression test, follow the procedure described in section 5.1 of the protocol.

7. Once all previous steps are completed (estimated time between 5 and 9 minutes/pen), score the presence or absence of animals showing abnormal behaviour (according to definitions in section 4.8). If necessary (to score resource base measures or if the number of animals in the pen is over 5 dogs), the assessor may enter the pen to finish the assessment.

8. Move to the second selected pen and start again from point 4.

9. Once all the sample pens have been assessed, record the end of assessment time (bottom of Annex 1).

10. Finally, take the Emotional state profile (Annex 5) and record how much you believe each one of the listed adjectives describes the animals housed in that shelter.
### Table 4.

Summary of the welfare measures included in the record forms (Annexes 1 to 5) with main sampling indications and approximate time needed to carry out the assessments parts.

<table>
<thead>
<tr>
<th>Measures</th>
<th>Sampling</th>
<th>Time needed approximately</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Management questionnaire</strong></td>
<td><strong>Annex 1</strong></td>
<td></td>
</tr>
<tr>
<td>- General information</td>
<td>Shelter level</td>
<td>15 min</td>
</tr>
<tr>
<td>- Social housing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Exercise</td>
<td>Score with help of shelter manager</td>
<td></td>
</tr>
<tr>
<td>- Surgeries/pain</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Mortality/Morbidity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Feeding</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>2. Resources checklist</strong></td>
<td><strong>Annex 2</strong></td>
<td></td>
</tr>
<tr>
<td>- Space allowance</td>
<td>Pen level</td>
<td>2 min/pen</td>
</tr>
<tr>
<td>- Bedding</td>
<td>Score from outside/inside the pen</td>
<td></td>
</tr>
<tr>
<td>- Water supply</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Sharp edges</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>3. Behavioural observations</strong></td>
<td><strong>Annex 3</strong></td>
<td></td>
</tr>
<tr>
<td>- Thermal comfort</td>
<td>Pen level</td>
<td>1 min/pen</td>
</tr>
<tr>
<td>- Barking level</td>
<td>Score from outside the pen</td>
<td></td>
</tr>
<tr>
<td>- Abnormal behaviour</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Diarrhoea</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Evidence of pain</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>4. Individual assessment</strong></td>
<td><strong>Annex 4</strong></td>
<td></td>
</tr>
<tr>
<td>- Body condition</td>
<td>Individual level</td>
<td>2 min/animal</td>
</tr>
<tr>
<td>- Cleanliness</td>
<td>Score from outside/inside the pen</td>
<td></td>
</tr>
<tr>
<td>- Skin condition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Lameness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Coughing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Reaction towards human</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>5. Emotional state profile</strong></td>
<td><strong>Annex 5</strong></td>
<td></td>
</tr>
<tr>
<td>- Emotional state</td>
<td>Shelter level</td>
<td>1 min/shelter</td>
</tr>
<tr>
<td></td>
<td>Score at the end of all assessments</td>
<td></td>
</tr>
</tbody>
</table>
### Annex 1 - Management questionnaire

**SHELTER:**

**DAY:**

**ASSESSOR:**

## GENERAL INFORMATION

<table>
<thead>
<tr>
<th>Name of assessor</th>
<th>Day of assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Shelter identification</th>
<th>Number of dogs in the shelter the day of the visit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of hospitalised dogs the day of the visit</th>
<th>Temperature the day of the visit (ºC)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Humidity (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

## SOCIAL HOUSING

<table>
<thead>
<tr>
<th>N° of single pens</th>
<th>N° of pair pens</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>N° of group (&lt;5) pens</th>
<th>N° of group (&gt;5) pens</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total N° of pens:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

## EXERCISE

- Are dogs left in an outdoor fenced area
  - Daily (30 min or more)
  - Weekly
  - No/not regular
- Are dogs walked on leash by shelter personnel or by volunteers
  - Daily
  - Weekly
  - No/not regular

## SURGERIES / PAIN CONTROL

- Presence of hospital pens
  - yes / no
- Presence of operating procedures for post-surgical monitoring
  - yes / no
- Presence of protocol of analgesia
  - yes / no

## MORTALITY

<table>
<thead>
<tr>
<th>N° euthanasia (health problems)</th>
<th>N° deaths (other than euthanasia)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>N° euthanasia (behaviour problems)</th>
<th>Mean dog shelter population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## MORBIDITY

Expenses for clinical treatments (12 months)

## FEEDING

- Type of diet:
  - dry pellets
  - cooked
  - wet/canned
- Feeding regime:
  - once/day
  - twice/day
  - ad libitum
- Special diets for puppies
  - yes / no
- Special diets for hospitalised
  - yes / no
- Special diets for geriatrics
  - yes / no

## NOTES

<table>
<thead>
<tr>
<th>Time assessment starts</th>
<th>Time assessment ends</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>SHELTER:</td>
<td>DAY:</td>
</tr>
<tr>
<td>----------</td>
<td>------</td>
</tr>
<tr>
<td>Sketch shelter layout</td>
<td></td>
</tr>
<tr>
<td>SHELTER:</td>
<td>DAY:</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td><strong>PEN ID</strong></td>
<td></td>
</tr>
<tr>
<td>Dimensions</td>
<td>Length Width</td>
</tr>
<tr>
<td>Nº animals &lt;20kg</td>
<td></td>
</tr>
<tr>
<td>Nº animals &gt;20kg</td>
<td></td>
</tr>
<tr>
<td><strong>HOUSING</strong></td>
<td></td>
</tr>
<tr>
<td>Indoor area</td>
<td>□ yes / □ no</td>
</tr>
<tr>
<td>Outside area</td>
<td>□ yes / □ no</td>
</tr>
<tr>
<td>Bedding type</td>
<td>□ shelter</td>
</tr>
<tr>
<td>Bedding</td>
<td>□ adeq</td>
</tr>
<tr>
<td>Sharp edges</td>
<td>□ yes / □ no</td>
</tr>
<tr>
<td><strong>WATER SUPPLY</strong></td>
<td></td>
</tr>
<tr>
<td>Type of drinkers</td>
<td>□ bowl/bucket</td>
</tr>
<tr>
<td>Works</td>
<td>□ yes / □ no</td>
</tr>
<tr>
<td>Safe</td>
<td>□ yes / □ no</td>
</tr>
<tr>
<td>Water clean</td>
<td>□ yes / □ no</td>
</tr>
</tbody>
</table>
## Annex 3 - Behavioural observations at pen level

### SHELTER: DAY: ASSESSOR:

<table>
<thead>
<tr>
<th>PEN ID</th>
<th>Nº animals/pen</th>
<th>Nº animal panting</th>
<th>Nº animal shivering/huddling</th>
<th>Nº animal barking</th>
</tr>
</thead>
</table>

### AT THE END OF EACH PEN ASSESSMENT SCORE PRESENCE/ABSENCE OF BEHAVIOUR

<table>
<thead>
<tr>
<th>Active repetitive (Y/N)</th>
<th>□ yes  □ no</th>
<th>□ yes  □ no</th>
<th>□ yes  □ no</th>
<th>□ yes  □ no</th>
<th>□ yes  □ no</th>
<th>□ yes  □ no</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Other compulsive (Y/N)</th>
<th>□ yes  □ no</th>
<th>□ yes  □ no</th>
<th>□ yes  □ no</th>
<th>□ yes  □ no</th>
<th>□ yes  □ no</th>
<th>□ yes  □ no</th>
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</thead>
</table>

### EVIDENCE OF PAIN AND DIARRHOEA

<table>
<thead>
<tr>
<th>Nº animals in pain</th>
<th>□ yes  □ no</th>
<th>□ yes  □ no</th>
<th>□ yes  □ no</th>
<th>□ yes  □ no</th>
<th>□ yes  □ no</th>
<th>□ yes  □ no</th>
<th>□ yes  □ no</th>
<th>□ yes  □ no</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Diarrhoea (Y/N)</th>
<th>□ yes  □ no</th>
<th>□ yes  □ no</th>
<th>□ yes  □ no</th>
<th>□ yes  □ no</th>
<th>□ yes  □ no</th>
<th>□ yes  □ no</th>
<th>□ yes  □ no</th>
<th>□ yes  □ no</th>
</tr>
</thead>
</table>

**Active Repetitive** (Circle; Pace; Social Pace; Whirling; Wall Bounce)  **Other compulsive behaviour** (Self-mutilation; Environment directed)
<table>
<thead>
<tr>
<th>SHELTER:</th>
<th>DAY:</th>
<th>ASSESSOR:</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEN ID</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N° animals/pen</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Animal ID</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age class</td>
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</tr>
<tr>
<td></td>
<td>young</td>
<td>adult</td>
</tr>
<tr>
<td></td>
<td>young</td>
<td>adult</td>
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<td></td>
<td>young</td>
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<td>adult</td>
</tr>
<tr>
<td></td>
<td>young</td>
<td>adult</td>
</tr>
</tbody>
</table>

### REACTION TOWARD HUMANS

#### Fear/Aggression test

0: no signs  
1: only fear  
2: defensive agg.  
3: offensive agg.

### HEALTH EVALUATION

#### Body Condition

- adequate  
- too thin  
- too heavy

#### Cleanliness

- clean  
- dirty/wet

#### Skin condition

- wounds  
- hair loss  
- swelling  
- ectoparasites

#### Lameness

0 1 2

#### Coughing

yes / no
Annex 5 - Emotional State Profile

SHELTER:  

<table>
<thead>
<tr>
<th>State</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Playful</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Happy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friendly</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Confident</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nervous</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unsure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anxious</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boisterous</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Att. seeking</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alert</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quiet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relaxed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barking level</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

DAY:  

ASSESSOR:


pigs (saws and piglets, growing and finishing pigs). Welfare Quality® Consortium, Leystad, Netherlands.
