Supplement 1: All parameters proposed and considered for inclusion in the Core Outcome Set

Parameters extracted from chronic kidney disease treatment efficacy systematic review (n=104):

Parameters which a cat's owner might notice at home:

- Overall history (overall signs which an owner notices before and after the cat's diagnosis)
- Appetite for food
- Overall amount of food eaten each day
- Thirst
- Drinking behaviour
- Vomiting (being sick)
- Number of bowel movements each day (number of times faeces are produced)
- Diarrhoea (runny faeces)
- Constipation
- Urination
- Halitosis (bad breath)
- Condition of coat/ fur
- Exercise tolerance (ability to carry out normal physical exercise of activities)
- Activity level (how active the cat is)
- Weakness
- Wellbeing
- Change in demeanour compared to at start of study

Parameters a vet might examine or measure during a consultation:

- Clinical signs/ full clinical exam
- Body condition score (a number which indicates the cat's weight and amount of body fat)
- Body weight

- Palpable size of kidneys (how large or small the kidneys feel when examined with the hands)
- Respiration (breathing)
- Ocular funduscopic examination (examination of the inside of the eye)
- Presence of lacerations in the mouth/ gingivitis (inflammation of the gums/ oral inflammation)
- Mucous membrane colour (colour of the gums and insides of the lips/ eyelids)
- Neurological signs (signs relating to the nerves)
- Mentation (attitude, alertness)
- Faecal phosphorus concentration (phosphorus is an electrolyte, important for metabolism)

Parameters which can be measured in the cat's urine:

- UPC (urine protein to creatinine ratio. Used to estimate the amount of protein lost in the urine)
- Urine creatinine (measures the amount of creatinine in the urine)
- Urine specific gravity (measures how concentrated the urine is)
- Urine glucose (urine sugar levels)
- Urine sediment (can include cells, crystals, parasites, sperm, bacteria)
- Level of blood in the urine
- Urine pH
- Urine leukocytes (white cells in the urine)
- Urine bilirubin (bilirubin is a product from the natural breakdown of red blood cells)
- Urine urobilinogen (formed from bilirubin)
- Semiquantitative urine albumin ELISA (used to measure a specific type of protein in the urine)

- Urine nitrites (can occur in bacterial infections)
- Urinary phosphate (a form of phosphorus in the body, important for metabolism, excreted into the urine)
- Urine ketonic bodies (a by-product of the body burning fats to make energy, for example in starvation or diabetes)
- Urine culture (to grow bacteria and look for infection)
- Urine hormone measurement (for growth hormone)

- Urine metabolism
- Urine biochemistry (measures chemicals in the urine)
- Urine sodium (an electrolyte, involved in water and blood pressure regulation)
- Urine potassium (has a role in muscle and nerve function)
- Urine phosphorus (an electrolyte, important for metabolism)
- Urine calcium (a mineral with many functions including building teeth and bones)
- Fractional excretion of phosphorus in urine (how much phosphorus is excreted in the urine compared to how much is retained in the blood)

Parameters related to the progression of chronic kidney disease and how long a cat might live for:

- Quality of life
- Progression of renal dysfunction
- IRIS stage/ stage of disease (a grading of the severity of CKD, based on blood and urine tests)
- Survival time (how long the cat lives for)
- End point for renal survival (the time at which the cat needs either intensive veterinary intervention, for example intravenous fluids or dialysis, or the cat is euthanased or dies because of CKD)
- Cause of death/ why the cat has died
- Renal histology at autopsy (the disease state of the kidney tissue after death)

Parameters related to a cat being involved in scientific studies:

- Overall assessment of efficacy (efficacy is how well the treatment works within a scientific study)
- Occurrence of adverse events (An adverse event is an unfavorable change in the cat's health, due to the treatment from the trial, either during the study or during a specified time following the study)
- Difficulty administering/ giving treatments to the cat

- Owner not giving the treatments to the cat
- Time enrolled in study (how long the cat remains in the study)

Parameters which can be measured in the cat's blood:

- Biochemistry (analysis of the blood for chemicals made by the body)
- Albumin (a protein made in the liver, roles include keeping fluid inside blood vessels)
- Globulin (proteins, made by the liver and immune system, many roles including in immunity and as enzymes)
- ALP (an enzyme found in high levels with bone or liver disorders)
- ALT (an enzyme found in liver, kidneys, heart and muscles)
- AST (an enzyme found in liver, heart and muscle)
- Chloride (an electrolyte, high levels may indicate dehydration)
- Creatinine (a waste product from muscles)
- Ionised calcium (a mineral, this is the active form)
- Phosphate (many functions, excreted or conserved by the kidneys)
- Phosphorus (an electrolyte, important for metabolism)
- Potassium (abnormal amounts can alter muscle or nerve function)
- Protein (protein in the urine comes from protein in the blood)
- Sodium (an electrolyte, involved in water and blood pressure regulation)
- Total calcium (a mineral, may be high if there is cancer or if certain drugs are used)
- Urea (end product of protein metabolism)
- Complete blood count (measures the number of different cell types in the blood)
- PCV (percentage of red blood cells to total blood volume)
- Erythrocyte count (number of red blood cells- these carry oxygen around the body)
- Haematocrit (ratio of red blood cells to total volume of blood)
- Haemoglobin (the part of the red blood cell responsible for carrying oxygen)
- White blood cell count (these cells help protect the body from disease)
- Total plasma solids (estimates the amount of protein in the blood)

More advanced tests which might be carried out to gather more information about a cat's health:

- Carbon dioxide (used as a measure of the acid-base balance)
- HC03- (bicarbonate, also used as a measure of acid-base balance)
- Aldosterone (made by the adrenal glands, regulates how the body handles salt, water and potassium)
- Plasma renin activity (important for thirst, blood pressure and urine output)
- Levels of RAA components (a hormone system, regulates blood pressure, blood flow and fluid volumes)
- T4 (thyroid hormone, controls several things including energy usage by the body)
- Plasma PTH (Parathyroid hormone- helps regulate blood calcium levels)
- 1,25 dihyroxycholecalciferol (calcitriol, regulates calcium levels)
- IGF-1 (insulin-like growth factor 1- an indirect test for growth hormone)
- FGF-23 (fibroblast growth-factor 23- reduces phosphate reabsorption)

Advanced tests which might be carried out to gather more information about a cat's health, by measuring how substances are cleared from the body:

- C-TEA clearance (C-tetraethylammonium bromide clearance, as a measure of effective renal plasma flow)
- Decrease in creatinine clearance (change in amount of creatinine excreted by the kidney)
- H-inulin clearance to represent GFR (GRF is Glomerular Filtration Rate, which estimates how much blood passes through the kidneys each minute)

Additional tests which might be carried out to gather more information about a cat's health:

- Blood pressure
- Abdominal radiography (an x-ray of the abdomen)
- Abdominal ultrasound (an ultrasound scan of the abdomen)

- Renal biopsy (a sample of the kidney tissue) to measure the α-SMA index (α-smooth muscle actin, a protein involved in the contractile apparatus of muscle)
- Muscle potassium content from a triceps biopsy)

Parameters suggested by panellists during the first round of the eDelphi and added for rating in the third round (n=20):

- Increased vocalisation (making more noise)
- Interaction with family and other pets in the household
- Interest in life
- Nausea (feeling sick)
- Pain and discomfort
- Time spent sleeping or behaving restlessly
- Abdominal palpation- examination of the abdomen area with the hands, to feel the size and shape of some internal organs to check for abnormalities
- Thyroid palpation- examination of the thyroid gland (in the neck) with the hands, to see if it has changed in shape or size from normal.
- Hydration status- the level of hydration / dehydration can be assessed with a physical examination and with tests.
- Muscle condition score – examination visually and by hand, of the muscles around the spine, head, shoulders and pelvis, to give a severity grading.
- Cardiac auscultation and heart rate- listening to the heart rate and the heart sounds with a stethoscope, to detect changes, for example: heart murmurs
- Platelets- important for blood clotting
- Symmetric dimethylarginine assay (SDMA) – the level of SDMA increases when there is a 25% decrease in kidney filtration rate, so this is used as an early indicator of decreased kidney function.
- Vitamin B12- important in red blood cell production, nerve function and appetite
- Vitamin B9- important in red blood cell production
- Vitamin D- important in calcium absorption and bone growth

- Renal blood flow- the volume of blood delivered to the kidneys over time
- Fractional excretion of electrolytes and minerals- the amount of electrolytes and minerals leaving the body in the urine compared to the amount being retained by the kidney.
- Renal biomarkers of kidney filtration- cystatins (protein used as a marker of the kidney filtration rate) , clusterin (protein which should be filtered by the kidneys), NGAL and RBP (markers for the kidney filtration rate)
- The renal biomarker transferrin (helps understand iron and anaemia status)