Annex B - Activities and tasks with direct animal interaction;
minimum criteria, ideal protocols and actual protocols used by KZN project, plus recommendations for improvement

Activity	Tasks	Minimum criteria for use	Ideal protocol	Actual protocol	Recommendations
State vet department 'standard' vaccination campaigns					
Rabies vaccination campaign	Advice to owners on handling when bringing dogs and cats to vacc point		Encourage humane handling when bringing to vacc point.	Use PA systems to advertise vaccination point day before arrival - no advice given for handling dogs, but ask for cats to be brought in breathable bags. Dogs are usually arrive loose and following owners and not on leash, if inhumane methods are being used by an owner the vaccination team provide advice to improve handling.	
	Vaccination point location	Minimise unnecessary concentrations and waiting times before vacc.	Minimise intra-dog contact and distance travelled by dogs by having more vaccination points at more regular intervals to reduce disease transmission between dogs.	Vacc dispensed from vehicle that travels along each road to minimise mixing of dogs, distance travelled and trauma involved in moving dogs over far distances. PA system and sirens used to announce presence in village and each road, so no unnecessary waiting.	
	Handling of dogs and cats for vaccination	Training provided to vaccination teams in safe and humane handling of dogs and enough monitoring provided to ensure standards.	Supervision and mentoring by person with competency/authority in humane handling techniques. Use interaction with owners at vacc point as opportunity to encourage humane handling/treatment of dogs.	Developed training course in handling with SPCA for Animal Health Technians (AHTs). 2-3 supervisors monitoring every vaccination exercise / campaign. SPCA supervision in addition periodically.	
	Injection technique	New needle for each dog, maintaining sterile injection technique.	Appropriate needle size. Correct injection site (between shoulder blades for s/c except when using injection poles or nets when i/m may be preferable).	Disposable needle for each dog, this sometimes breaksdown and one needle usd for a group of dogs in one household. 2.5ml short needles. S/c used for all hand held dogs (neck between shoulder blades recommended see innoculation techniques SOPs) and net catches (may use back leg for s/c). 1ml injection pole into back leg i/m for very difficult dogs. Monitored by supervisiors as can be abused. Oral baits also used for very difficult dogs, baits that are not picked-up retrived to avoid non-target species contact. Dart guns were considered but there are concers about abuse of the method, so not planned for use currently.	New needle for each dog, maintaining sterile injection technique.
Euthanasia	Handling of dogs for euthanasia	Training provided to vaccination teams in safe and humane handling of dogs and enough monitoring provided to ensure standards.	Supervision and mentoring by person with competency/authority in humane handling techniques.	Developed training course in handling with SPCA for AHTs. 2-3 supervisors monitoring every vaccination team. SPCA provide additional supervision through unannounced inspections. Only AHTs and vets euthanase.	
	Euthanasia methodology	Overdose of pentobarbitone ~20% by i/v route; i/c or i/p may be used if i/v impossible.	Overdose of pentobarbitone ~20% i/v through cephalic vein.	Standard use of pentobarbitone and see SOPs, i/v first choice i/p if very aggressive, rabid or collapsed dog. Exceptional circumstances (pack of aggressive uncontrolled dogs killing livestock or people) shooting has been used as dogs could not be caught. Very rare and primarily used to explore causes and orgin of these dogs with community - who were very grateful for the removal of the dogs. Has not been repeated for many months. Euth of rabid dogs by vet department or SPCA using control poles, nets and i/v pentobarbitone, i/p if i/v not possible. Usually rabies cases are already dead - killed by people, other animals or cars.	will be no use of Gates Foundation grant for shooting. Shooting does not form part of the larger rabies project as it has only been used in rare emergency situations and will not be offered as part of the rabies project services; hypothesis is that provision of euthanasia 'service' by vaccination teams will reduce abandonment that leads to uncontrolled dog packs - this hypothesis will have to be tested by asking communities whether 'problem' dogs have reduced in months/years following euthanasia service by vaccination teams.
	Selection criteria	Agreed criteria for euthanasia based on welfare need, aggression and 'unwanted' by owners. Agreement of owner that euthanasia is desirable.	Situation resulting in dog becoming 'unwanted' is discussed with owner to explore other options and highlight causes to avoid similar case in future. Training provided in recognising pain/suffering to support teams in providing objective advice to owners.	Written consent for euthanasia from owner obtained before euthanasia is carried out. Majority only a reactive service if owner requests euthanasia of a dog. If dog is clearly very sick euthanasia will be offered. Training in euthanasia includes discussion on welfare issues suitable for euthanasia.	
	Disposal of carcass	Carcass not accessible to other animals.	Incineration or properly buried	Body bagged in field and incinerated at state vet lab or SPCA, buried at municipal dump or buried by owners.	
Primary healthcare	Ivermectin injections	Appropriate sterile drawing technique and new needle for each dog. Proper placement of injection (s/c not at same site as vaccine).	Appropriate dose rate.	New needle for each dog. Half dose for small dogs and full dose for normal/large size dog. Decanted from 500ml bottles into 10ml bleeding tubes which reduces chance of contamination and degrading of the drug. Available at all vaccination campaigns for dogs with visible skin conditions. Maximise distance between rabies vacc site and ivermectin injection site.	
	Immuno or chemical contraception	Use contraceptives with proven safety standards. Follow manufacturers instructions, beware of possible side effects and explain signs of side effects to owners.	Surgical sterilisation is currently the only permenant method of sterilisation and has the least side effects if conducted properly. Imoonco or chemical sterilisation/contraceptives will be a great tool, but must be tested for safety before wide-scale use and use must follow manufacturers instructions.	Progresterone tested in the past, but not currently part of the project. Are looking for development of immuno contrceptions like GonaCon to include in future.	
State vet department and SPCA collaborative holistic healthcare campaigns					
Primary healthcare	Treatments for injuries/illness	Veterinary supervision.		As needed, in field preferably but animals can be taken back to clinic if essential.	
	Supplementary vaccination regimes	Single dose. New needle for each dog, maintaining sterile injection technique.	Additional booster given at appropriate interval.	15-30 days return to remove stitches and re-vacc with 5 in 1 (Eurican) and rabies.	New needle for each dog, maintaining sterile injection technique.
	Deworming	Use manufacturer's instructions on dosage	Use best dewormer available and follow manufacturer's recommendation	Oral wormers for puppies, pregnant bitches or thin dogs.	
	Topical ecto-parasite treatment	Use manufacturer's instructions on dosage	Use manufacturer's instructions	Frontline applied for all dogs that are sterilised (Frontline donated to SPCA).	
	Collection/identification of dogs for surgery	Owners verbally agree to sterilisation of dog(s). Clear identification of origin and ownership to facilitate return (tagging).	Written consent with explanation of risks.	Name, address (if possible) and cell phone number of owner taken. Verbal explanation of benefits of sterilisation and procedure explained. Encourage female spays, will sterilise from 10 weeks of age. Number system to identify dog, 3 tags on collar so owners have one tag, vet has other tag and 3rd stays with the dog.	

Surgical sterilisation	Handling of dogs for surgery.	Training provided to sterilisation teams in safe and humane handling of dogs and enough monitoring provided to ensure standards.	Supervision and mentoring by person with competency/authority in humane handling techniques. Understanding of importance of stress mitigation for improved surgical results.	Developed training course in handling with SPCA for AHTs, SPCA staff also do some handling. Transport in cages or wire travel boxes on back of van from house to clinic and return to house. Some dogs collected by owners.	
	Pre-medication	Use of appropriate pre-medication. Sedative & Long acting antibiotic	Correct drug, administered at correct dose and with adequate lead time. Premed to include sedative, painkiller & long acting antibiotic	Prepare cephlic vein, shave and swab with spirit. Dog - ACP 10 20mls + atropine 5mls + 75 mls sterile water at 1ml/10 kilos. Rompun (Xylazine 2 %) only for aggressive dogs only. Cats - Rompun and Ketamine 10 % 0.3/0.3. 5 in 1 vaccination plus rabies - phenybutazone 1ml/15kgs. Broad spec long-acting penecillin (Lentrax) 1ml/10kg. Ivermectine 1ml/50kgs.	For pre-med, a sterile needle per injection is desirable but at a minimum one sterile needle per dog with the vaccination shot being given first is recommended
	Induction	Induction only when using gas anaesthesia, thiopentone or Propofol	Thiopentone or propofol i/v at recommended dosages	Check mucus membrane colour, CRT and habitus. See induction drugs used below.	
	Anaesthetic	Use of anaesthetic drugs and protocols that fall within recommended veterinary guidelines.	Use of the latest recommended anaesthetic drugs and protocols that fall within modern veterinary guidelines.	Combination of induction and depedendent on individual case either top-up using thiopentone or gas/halothane anaesthesia. Butterfly catheter, taped and kept for entire surgery - Intravol 1ml/5kgs (for top up). If propofol 2mls/3kgs i/v induction followed by Halothan gas anaesthesia. Pregnant bitches and pups etc intubated and onto gas. Other dogs mainted at appropriate surgical plane through top-up with thiopentone.	
	Surgical preparation of dog	Adequate surgical area shaved, surgical sites properly srubbed and incision site adequately sterilised. Use of new sterile drape for each dog.	Non-trumatic clean shaven area in 5cm radius of incision site. Anti-septic soap scrub with adequate washdown. Surgical site sterilisation with propriotary surgical disinfectant. Appropriately configured sterile surgical drapes (big enough to cover dog with reasonable sized opening).	Shave (clipper or razor), hibitane, 3 spray/wipe and final spray. Re-use drapes unless it gets soiled with blood or urine. Usually one drape per 5 dogs.	Use a new sterile drape for each dog
	Surgeon preparation	Minimum surgeon scrubbing technique; using clean running water, sterile scrubbing brush and disinfectant soap. Purpose manufactured sterile surgical gloves; new pair for each dog.	Purpose designed surgical scrubbing facility and complete scrubbing technique. Use of correct surgical attire. Purpose manufactured sterile surgical gloves put on using correct gloving technique; new pair for each dog.	Water from bowl with hibiscrub for 1st 2 srcubs, 3rd uses running water. New pair of gloves for each scrub, could be one pair for 10 animals.	A new pair of gloves is used for each opertaion
	Surgical technique	Appropriate aseptic technique.	Full aseptic technique		
		Appropriate surgical instrumentation. Use new set of sterilised instruments after maximum of every 10 operations	One set of individually packed and autoclaved instruments for each operation comprising adequate instruments drapes, towels and swabs	One set for 10 dogs. Scalpels as necessary, 1 per 5 approx. New set if dog looks unwell/infected (e.g. pyometra or TVT).	At least three sets of insruments are available so that used instruments can be left in cold sterilisation fluid for at least 15 minutes before being used again. As autoclaved instruments available repalce instrument set after every ten uses.
		Complete removal of ovaries in bitches. Removal of uterus from below bifurcation		Complete removal of ovaries in bitches. Removal of uterus from below bifurcation	
		Use of sterile absorbable suture material for stump ligation	Use of synthetic absorbable suture material for all internal fixation	Monochromic cat gut for ligatures	
		Minimum two layer closure Muscle & skin	Three layer closure possible intradermal skin closure using absorbable monofilament + surgical glue	3 layers on pregnant or obese dogs. Usually 2 layer for spays and neuters. Nylon for 2 layer closures. Simple interrupted nylon for linear alba. Horizontal mattress skin sutures.	
	Post surgical procedures	Place in appropriate environment with acceptable ambient temperature under observation of patient till sternal recumbency achieved		Recovery in same area as surgery so surgeon can watch recovery. Animal Welfare Assistants also watch for signs of recovery.	
		Retain patient until able to walk with minimum of staggering	Retain patient until fully recovered	Returned to owner once walking, approx 3-4 hrs post-op. Puppies dewormed and fed. Adult dogs given water.	
		Provide owners with emergency contact information where they could seek help in case of patient problems	Provide owners with advise on what to expect after surgery and written information of actions to take in case of any unexpected problems	Dogs transported by vehicle to home. Owners asked to contain dog if possible, at least keep them in a quiet place and watch for if they get sick. Local councillors or chiefs have SPCA and vet department numbers to call if animal becomes sick.	
		In cases where non-absorbable suture used in skin, removal of sutures 7 to 10 days post surgery	Provide owners with literature on ways of providing their animals with better primary health care	15-30 days return to remove stitches and re-vacc with 5 in 1 and rabies.	
			Follow up with patient ten days post surgery to ensure full recovery		
				Reverse cats - antesedan.	
	Identification	Permanent mark so sterilisation is not attempted on spayed dog.	Individual identification to provide proof of ownership and estimates of longevity.	Using nylon sutures for muscle layer closure provides add security and can be palpated for the life time of the bitch.This ensures that the same animal is not re-operated on by mistake in the future	Explore potential to ear notch or tattoo, but not essential if nylon stitching prevents re-opening.
	Extra notes			With 2-3 days campaigns, use different hall each day. Disinfect the hall with QACs before leaving.	
				Bring travel fridge for vaccines - can be electric or gas powered.	
				Some dogs taken back to SPCA clinic if sick or have intra-abdominal testes.	
				Some student vets work with experienced SPCA vet at SPCA clinic before joining field clinic. Plans to open up to private and state vets to work with the field clinic - could also spend time with SPCA before assigned to the field. Also plan for final year vet students to volunteer to help - will need to be in addition to core staff.	SPCA to develop a SOP for actual surgery for vets to follow. SPCA SOP for running of field clinic to ensure efficient and practical set-up of future clinics
Sample collection from Jackals	Humane trapping	Use of humane traps	Use of humane traps that are adequately monitored to ensure captives do not remain trapped for long periods	Not currently collecting samples from Jackals - planned future activity for surveillance	
	Handling	Humane handling of trapped animals	Personnel assigned to wildlife trapping are specially trained in wild animal handling		
	Release	Animals released back into safe environment	Wild animals are only released when fully recovered and capable of effectively escaping predation or harassment		
Quarantine	Facility	Complies to minimum legal requirements set by responsible authorities	Adaquate facilities available for quarantine to be an option if an owner does not wish to have a dog euthanased. Facility with adequate space and environmental enrichment to provide basic level of animal welfare.	SPCA facility used by project to undertake any quarantine requirements. Obervation of dogs at home by owners under direction of state vet department.	
	Management	Adequately supervised and staffed.	Appropriate management in place to maintain adequate animal welfare.		

	Euthanasia	Animals euthanased using humane methods if rabies diagnosed by clinical signs.	Euthanasia by humane methods carried out as soon as clinical signs develop.		
Outbreak management	Vaccination	Vaccinate animals using minimum criteria descibed above in ring around outbreak - do not use mass culling to attempt to control an outbreak.		Ring vaccination 20km around outbreak.	
	Euthanasia of rabid dogs	All animals presenting with symptoms resembling rabies should be humanely euthanized as soon as possible and appropriate pathological specimens examined by VIL		Vet department and SPCA will euthase rabid animals using pentobarbitone (i/v or i/p if i/v not possible). Most animals suspected of having rabies are killed by other animals, local people or in road traffic accidents.	
	Euthanasia of dogs that have been in direct contact with rabid dogs	Animals that were bitten by rabid dog should be humanely euthanized. Illegal to vaccinate animals having direct contact.		Vet department and SPCA will euthase animals having direct contact using pentobarbitone (i/v or i/p if i/v not possible). Some animals are occasionally provided with Post Exposure Treatment.	