Supplemental 2: *Sensitivity analysis*

We conducted sensitivity analyses to explore two primary vaccination outcomes: impact of dog confinement on vaccination coverage and impact of vaccination method on campaign cost. First, we varied the proportion of confined dogs in order to determine the level of confinement for each of the three vaccination methods that would achieve >70% vaccination coverage for free-roaming dogs. Second, we varied the proportion of dogs vaccinated by alternative methods (CVR and ORV) to assess the impact on coverage and campaign costs. Both objectives assumed a vaccination campaign targeting a reasonable vaccination-planning unit; defined as a dog population of 30,000 with 24,000 vaccines available (enough to vaccinate 80% of the dog population under ideal circumstances). Vaccination costs, campaign duration (60 days), and vaccinator capacity were held fixed for the sensitivity analysis and are displayed in Box 2. Vaccine allocation scenarios that resulted in a model-estimated free-roaming vaccination coverage >70% were identified.

For objective one, we calculated vaccination coverage and cost-per-dog vaccinated across varying proportions of confined dog populations, using 5% increments (1%, 5% - 95%, 99%) (Figure 2). We provide a summary of cost-per-dog-vaccinated by cost-category, using the average confinement status values from the respondent dataset (Table 2). Outcomes were calculated under three vaccine distribution scenarios; CP vaccination (90% CP, 5% DD, 5% CVR), CVR vaccination (90% CVR, 5% DD, 5% CP), and ORV (85% ORV, 5% CP, 5% DD, 5% CVR). We assumed that the effectiveness of the vaccine distribution strategy corresponded with GDREP phase III coverage rates.44

For the second objective, the same dog population was tested under three programmatic scenarios: a low vaccination capacity program (GDREP phase I), a moderate vaccination capacity program (GDREP phase II), and a high vaccination capacity program (GDREP phase III) (Box 1). Regardless of capacity of the program, we assumed that the effectiveness of the ORV strategy was 95%, since only minimal technical and animal handling skills are required for the hand-out method of oral dog vaccination. The dog confinement status for this scenario was fixed at 28% confined, 48% semi-confined, and 24% never confined (the average values from respondent-provided data). The cost per 1% increase in free-roaming dog vaccination coverage was calculated over varying vaccine allocations to either CVR or ORV strategies (ranging 0% - 90% allocation to the strategies in 10% increments).