Identifying a pig-based intervention against *Taenia solium* infection in the pig population

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**Background**

- Pigs provide an easy source of income and meat while requiring little to no investment from families; however, they are the source of many zoonotic diseases, such as neurocysticercosis (NCC).
- Within low income countries, pig owners commonly allow their pigs to roam freely since pigs can easily forage on their own without supplemental feeding. In some areas, people will willingly defecate into pig pens as an effective method of waste management. However, poor sanitation and husbandry practices can place these pigs at increased risk of infection by *Taenia solium*, the porcine tapeworm responsible for NCC.
- Meat inspection prior to slaughter or during the butchering process has been the main avenue of identifying infected pigs; however, other intervention strategies include mass drug administration, vaccination, and improved pig husbandry and sanitation.

Given the possible pig-based interventions to deploy, our study aims to identify a promising and feasible option that would fit the cultural and economic context of the Tibetan community.

**Objectives**

- Understand the full interaction and contact between the village residents and their pigs to identify a potential point for intervention.
- Assess the current medical and husbandry support given by the local veterinary team for the maintenance of the health of the pig population to identify areas of potential increased or further action.
- Assess the prevalence of *T. solium* infection in the pig populations of the Tibetan villages through carcass examination and serological diagnosis.

**Pig-Associated Risks of *T. solium* Infection**

From previous work within our study area, pig husbandry practices and pork consumption have been identified as exposures that increased risk for *T. solium* infection.¹ The next phase of work in the study will target adults living in villages in the catchment areas of schools tested during our initial school survey.

**Understanding *T. solium* Infection and Transmission in Pigs**

1. Interview pig owners to understand common methods of pig raising and pig husbandry:
   - Types of feed or food given
   - Style of housing and confinement
   - Age of pig at slaughter
   - Number of pigs being raised in a household
   - Vaccination or medical treatment for other parasites
   - Level of care received from veterinarians
   - Amount of time pig farmers spend with their pigs

2. Identify local veterinarians for interviews of their level of interaction with pig owners and their work with pig herd health and disease surveillance or prevention.

3. To sample disease prevalence among the pig population, collect blood or tissue samples from live or recently slaughtered pigs to identify past or current *T. solium* infection.

**References**