



# One Health Approach to Rabies Control in Urban India: Lessons from Tamil Nadu

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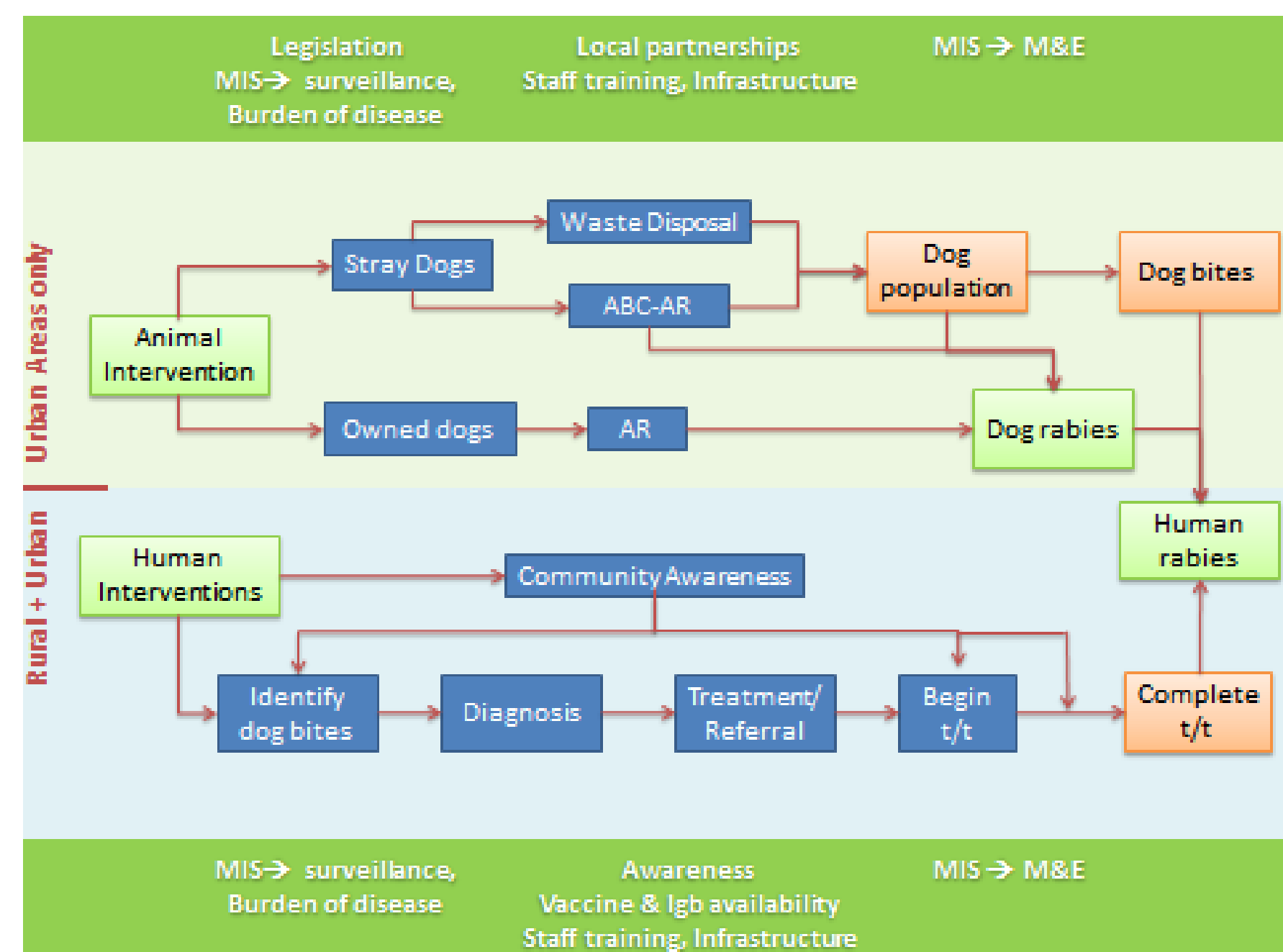
## BACKGROUND

Even though India accounts for ~ 50% of global human rabies mortality, there is no organised national rabies control programme. Rabies has largely seen to be an urban problem and interventions largely been limited to urban areas.

The purpose of this study is to describe the characteristics of rabies transmission in urban areas and describe a set of context-specific interventions strategies employed to achieve urban rabies control in Tamil Nadu.

Tamil Nadu was first state in India to implement state-wide, multi-sectoral rabies control initiative with mix of interventions. A 2004 court order on ban on killing of dogs led to revision of strategies for dog population control.

50 Urban Local Bodies administered by city corporations/municipalities were covered under a pilot project for controlling rabies through the use of internationally accepted strategies as described below. The animal interventions were accompanied with interventions on the human side as well. The entire intervention implementation was monitored by a state level coordination committee comprising of representatives from animal health, human health, local administration, and other departments.



## INTERVENTION MODEL

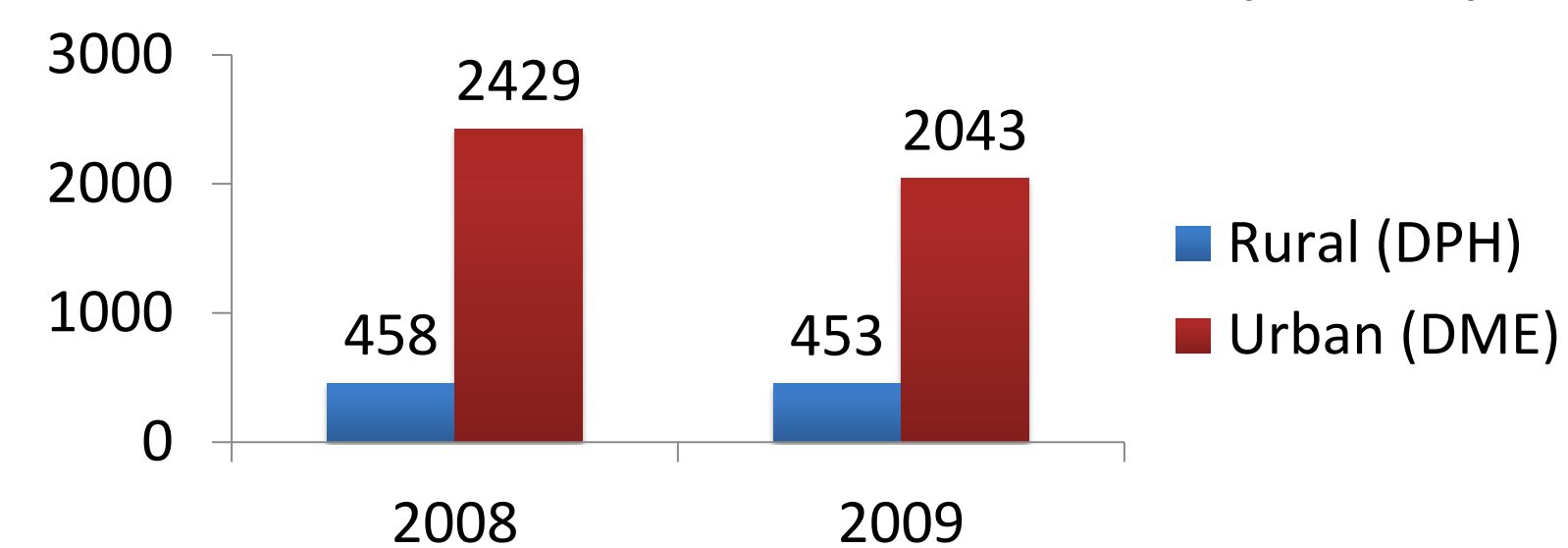
- Animal birth control- anti rabies vaccination (ABC-AR) in stray dogs in partnership with NGOs and private veterinarians
- Anti rabies vaccines made available at all health facilities across Tamil Nadu
- Intersectoral coordination with other stakeholders at state and corporation/municipality level a flexible collaborative mechanisms
- Municipal waste management through innovative partnership models
- Regulation of dog ownership
- Reporting of dog bites through disease surveillance system

## EPIDEMIOLOGY

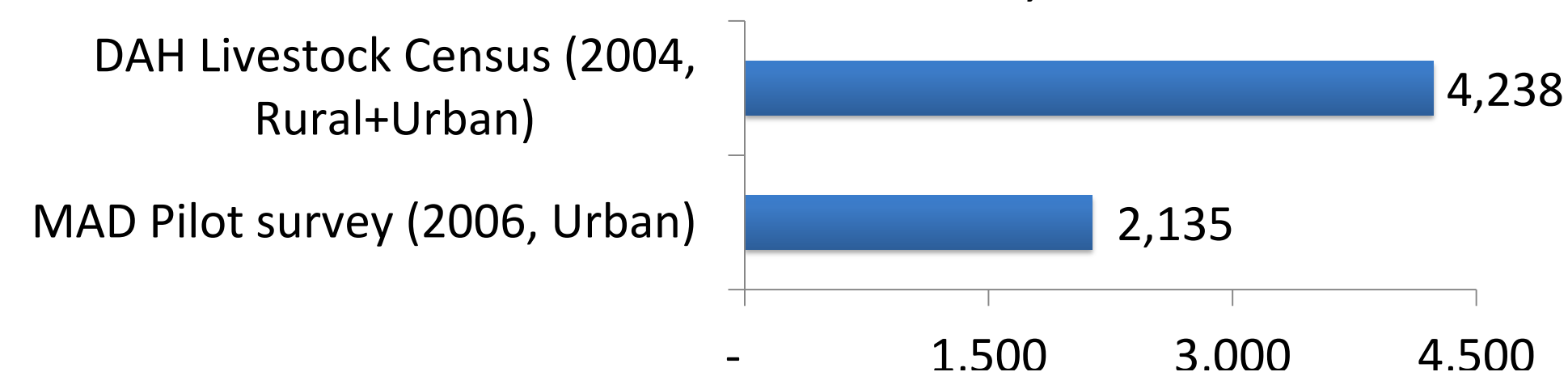
The epidemiologic characteristics of urban rabies is distinct from the rural picture. National surveys have demonstrated higher number of dog bites from rural areas. Using the data collected through the Integrated Disease Surveillance Programme, we found the inverse to be the case; more dog bites were reported from urban facilities, possibly as a result of increased demand for rabies vaccine offered free of cost at all health facilities.

A relatively lower dog population density was found in urban areas according to the baseline survey conducted for the municipal pilot project. Paradoxically, a much higher proportion of stray dogs compared to owned dogs was found in urban areas. The implication is that while dog population might be less in urban areas, the focus of ABC-AR strategy by public authorities should be on feral dogs compared to domestic ones.

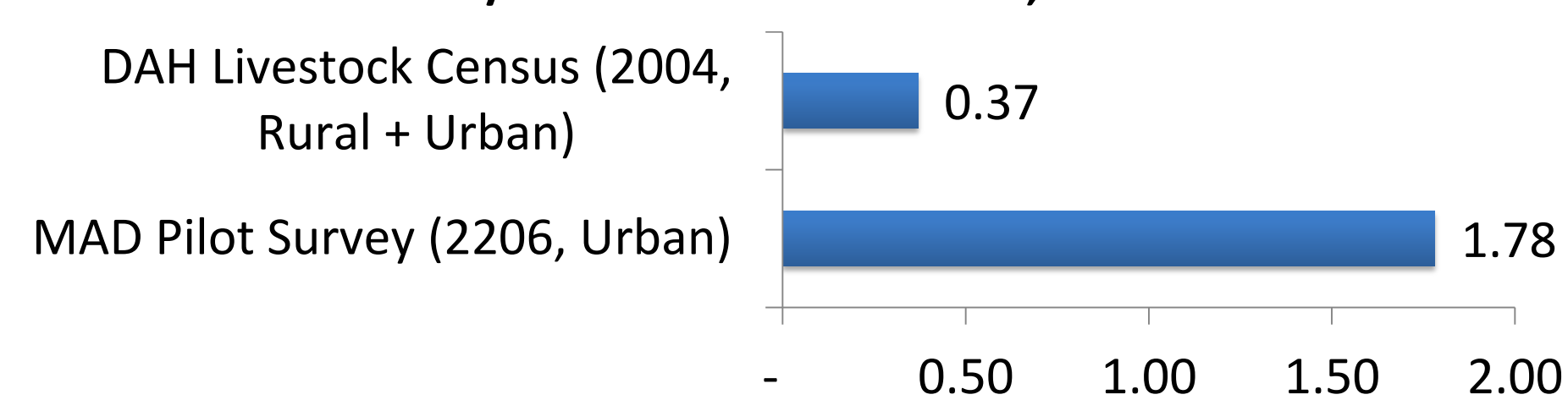
DOG BITE CASES PER 100,000 POPULATION (2008-09)



DOG POPULATION DENSITY PER 100,000 HUMANS



STRAY DOG / DOMESTIC DOG RATIO, TAMIL NADU

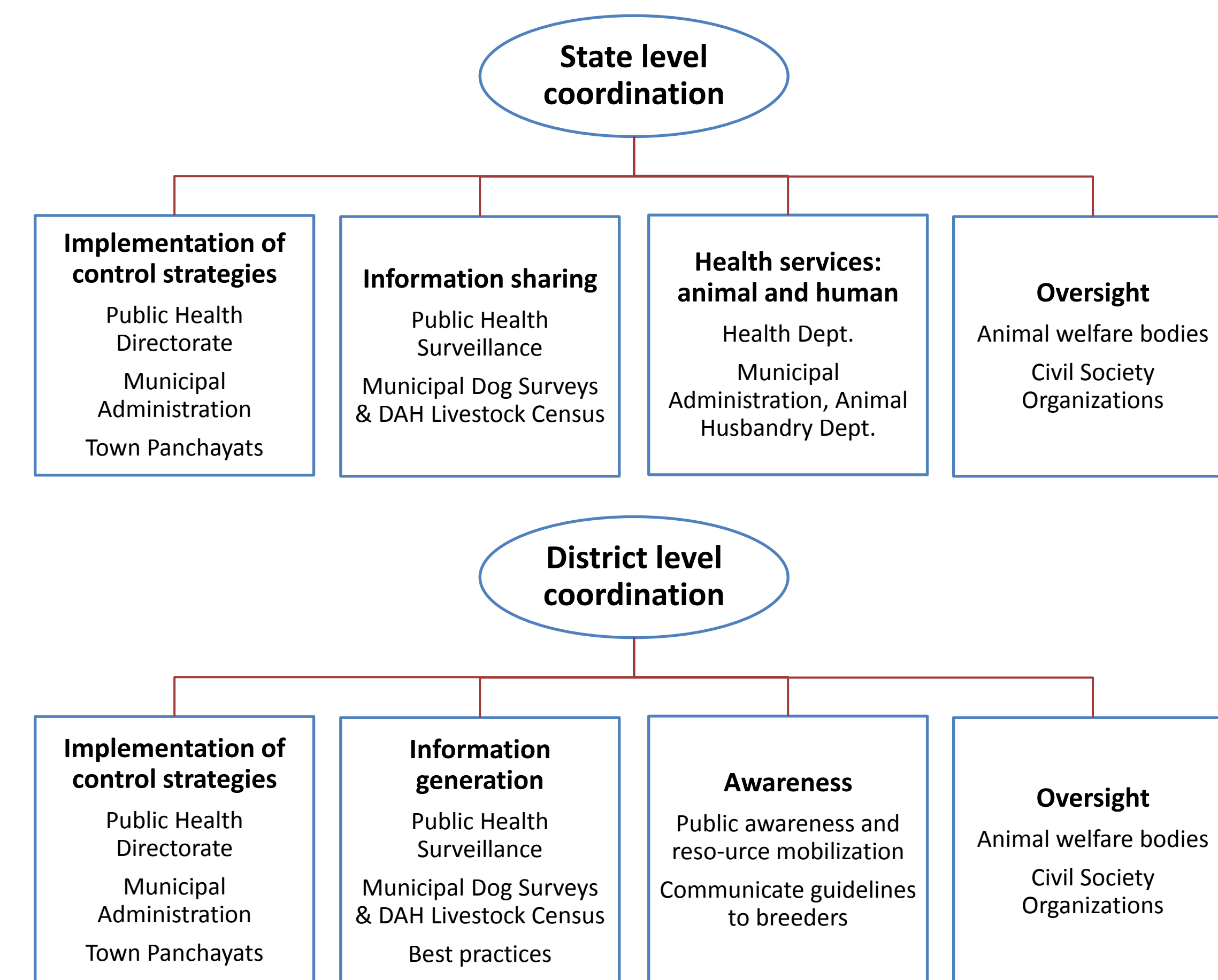


\* This depiction is based upon data reported through surveillance system and might not be the exact depiction of actual burden

## POLICY INNOVATIONS

- Ban on neural tissue vaccine
- Assured availability of vaccines at all health facilities through TNMSC
- Regulations for licensing of dog ownership
- Constitution of state level coordination committee
- Ban on killing of dogs, Launch of ABC-AR
- District level monitoring committees
- Promotion of Intradermal vaccine administration across state

## INSTITUTIONAL SET UP



## CONCLUSIONS

Tamil Nadu has implemented evidence-based interventions including:

- animal birth control
- human and dog anti-rabies vaccination
- awareness campaigns
- environmental control (improved sanitation and less availability of food sources for stray dogs)

The initiative exemplifies the concept of one health collaborations through an environment of strong political will, clearly defined roles and responsibilities of agencies, co-ordination mechanisms, and a culture of open information exchange. These, in turn, have been associated with an impact on the incidence of rabies in urban areas.

However rabies control requires a holistic approach; simultaneous implementation of context specific intervention strategies will be required to effectively control rabies in both urban as well as rural areas.

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