Aim of the study
PART I: Studies on Cholera patients

3.1 To find out the occurrence and distribution of cholera incidences in and around the city of Chennai.

3.2 To find out the distribution of different serogroups of *Vibrio cholerae* (O1, O139, and non-O1/ non-O139) among the cholera cases admitted to the Communicable Diseases Hospital, Chennai.

3.3 To find out the differences in the incidences of cholera with respect to seasonal variation and age and sex of the patients in and around Chennai city.

PART II: Studies on *Vibrio cholerae* from Environment

3.4 To find out the presence of toxigenic *Vibrio cholerae* and other related organisms in environmental samples such as freshwater, freshwater molluscs and their seasonal variation.

3.5 To demonstrate the presence of clinically important *Vibrio species* in the bat fecal pellets.

3.6a To find out the survival of *Vibrio cholerae* in fresh water molluscs in controlled environment, as in an aquarium.

3.6b To find out the survival potency of various serogroups of *Vibrio cholerae* in the fecal pellets of bats.
PART III: Studies on enteropathogenicity in animals and toxin genes

3.7 To determine the enteropathogenicity of various serogroups of *Vibrio cholerae* isolated from clinical and environmental sources in animal models.

3.8 To demonstrate various toxin genes by polymerase chain reaction and their correlation to their enterotoxigenic potential of the clinical and environmental isolates.

PART IV: Antibiogram of *Vibrio cholerae* isolates

3.9 To study and compare the antibiotic susceptibility of the *Vibrio cholerae* isolated from clinical and environmental samples.

PART V: Experimental studies

3.10a To demonstrate the transduction induced by sunlight in vitro.

3.10b To demonstrate the *in vivo* transduction in live fresh water pila.