

## Surveillance of rickettsial diseases in Ukraine" (BTRP proposal P364)

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Arthropods are notorious vectors of various pathogenic protozoa, rickettsiae, bacteria, and viruses that cause serious and life-threatening illnesses in humans and animals worldwide. Screening of arthropods for such pathogens by using epidemiological tools may disclose the prevalence of arthropod-borne pathogens in particular geographic environments. Some of these agents, such as *Rickettsia prowazekii* (typhus fever), *Coxiella burnetii* (Q fever) are now recognized as important emerging vector-borne infections as well as agents that could be utilized as biologic weapons. Ehrlichial and rickettsial infections have been reported to exist in a broad band across Europe, Asia, Africa, and the Americas. Other arthropod-borne organisms, including some *Borrelia* and *Bartonella* spp., have also been shown to cause infections in animals and humans, and are transmitted by different kinds of tick.

Pediculosis (lice infestation) is observed in all countries in the world and among all groups of people. Pediculosis is influenced by social, hygienic, and epidemiological circumstances. The louse-borne diseases, epidemic typhus (*Rickettsia prowazekii*) and trench fever (*Bartonella quintana*) are classically transmitted by body lice, while the role of head lice as vectors has not been fully resolved. Epidemiologic associations show that the louse can transmit *Rickettsia prowazekii* and *Bartonella quintana* simultaneously. Pediculosis as a public health problem has increased in the last few decades in many developed regions of the world. Head lice infestation, particularly of children, has become more important as pediatric health problem. At the beginning of the third millennium, the increase of pediculosis has not declined.

It is suspected that arthropod-borne infections are common in Ukraine. The Lviv Research Institute of Epidemiology and Hygiene (LRIEH) has a long history of investigating arthropod-borne infections throughout Ukraine, and has historical data on infections such as epidemic typhus.

Investigations of arthropod-borne diseases (louse-borne typhus, trench fever, Q-fever, other tick-borne rickettsial diseases, tick-borne and mosquito-borne arboviral infections, tularemia) what are include in Project UP-1/STCU P-364 will made for the first time in Ukraine. We will obtain the algorithm of the serological study of the seroprevalence of the arthropod-borne diseases. Further investigation into a wide variety of arthropod-borne infections, utilizing the expertise at the LRIEH, as well as CSES in Kiev and Anti-Plague Institute in Odessa, will provide useful information for Ukrainian public health and medical personnel. Full scale Investigating these infections can provide information that will improve disease recognition among physicians caring for patients in affected areas and provide guidance regarding the importance of control measures.