Universität Basel

Research Project

Morbidity patterns and transmission dynamics of neglected tropical diseases

Third-party funded project

Project title Morbidity patterns and transmission dynamics of neglected tropical diseases
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Background: The general health of populations has been improved substantially in the last decades and child mortality could be reduced in developing countries. However, progress remains uneven and there are growing differences in mortality and illnesses in different parts of the world. For example, communicable diseases and mother and child conditions are particularly severe in the tropics and subtropics, and impair the socio-economic development. Further improving the health of these population groups could save millions of healthy life years and reduce poverty, and hence contribute to achieving the objectives set by the United Nations for 2015, the so-called Millennium Development Goals (MDGs). Certain MDGs are addressed by global alliances and partnerships; e.g. for the control of f HIV/AIDS, tuberculosis and malaria. However there exist many other parasitic and communicable diseases that are often neglected. Some of these “neglected tropical diseases” are transmissible between animals and humans. Our project aims at a better understanding of the transmission and control of NTDs in Central and West Africa. Goal and objectives: Prior to being able to propose effective ways for the control of NTDs, we need to deepen our understanding how people get ill from NTDs and how they are transmitted to them. Many of these diseases are closely linked to how people live together and to their environment. Approach: This requires following-up larger groups of women, men and children for a longer time period. This means that people are seen repeatedly by competent medical personnel to record their health. A further complication is that some of these people do not live all the time at the same place, but migrate with their animals for the search of food and water. We therefore envisage to follow-up two groups of people, a highly mobile population in Chad, and a rural sedentary population in south-central Côte d’Ivoire. Observing whole population groups on a regular basis for several years can be effectively done within a so-called “demographic surveillance system” (DSS). At any encounter people will be asked if the consent to a clinical examination and the collection of specimens for the detection of agents of disease. A tool for assessing illnesses due to NTDs (morbidity tool) will be developed and tested for its accuracy. Outcome: Once solid knowledge will be established on the most important illnesses, locally adapted interventions can be designed and implemented in accordance to the identified needs (e.g. mass treatment against worms). The established DSS can be further used for long-term monitoring of many other health- and poverty-related issues.

Keywords neglected tropical diseases, zoonoses, morbidity patterns, transmission dynamics, metabolic profiling, mobile nomadic populations, demographic surveillance, Chad, Côte d’Ivoire
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