**Thalassemia and iron deficiency in Cambodia: relationship to anemia**

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**Background**: Anemia is a serious public health problem in developing countries. A number of factors might contribute to the condition including iron deficiency and thalassemia. In Cambodia, prevalence data on anemia, iron deficiency and thalassemia is not available.

**Objectives:** To determine the prevalence of anemia, thalassemia and iron deficiency in Phnom Penh, Cambodia and to determine the burden of anemia in relation to thalassemia and iron deficiency.

**Method:** Left-over blood samples of 400 students enrolled the blood donation at faculty of Pharmacy, University of Health Sciences, Phnom Penh, Cambodia will be recruited consecutively during August to October 2013. All subjects will be initially screened for thalassemia at the faculty in Phnom Penh, Cambodia using either OF/DCIP or MCV/DCIP (MCV < 80 fl). Blood and plasma samples of both positive and negative-screening subjects will be collected and sent to the Center for Research and Development in Medical Diagnostic Laboratory (CMDL), Faculty of Associated Medical Sciences, Khon Kaen University, Thailand, for investigation of thalassemia and hemoglobinopathies such as hemoglobin typing as well as DNA analysis. The project was approved both by the National Ethic Committees on Health Research (NECHR), Phnom Penh, Cambodia and by the Ethical Committee of Khon Kaen University, Khon Kean, Thailand. Informed consent was obtained from all participants.

**Anticipated outcome:** The study will provide basic information for further implementation of appropriate preventive and control measures for anemia, iron deficiency as well as thalassemia in the country.

**Key words:** Prevalence, Thalassemia, Iron deficiency, Anemia, Cambodia