

## Preliminary results on children's diarrheal disease burden in three selected rayons of the Aral Sea area

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In summer 2003 the Center for Development (ZEF) of the University of Bonn, Germany, carried out a survey on diarrheal disease in Khorezm region, in the framework of the project "Economic and Ecological Restructuring of Land and Water Use in the Khorezm Region (Uzbekistan)". The project is funded by the German Ministry for Education and Research (BMBF) and is carried out in close collaboration with UNESCO and the Government of Uzbekistan. The central task of the project is to improve efficiency and sustainability of land and water management in the region. About 51% of all the households in Khorezm extract their drinking water either from open wells or shallow boreholes, which are often fecally contaminated due to the shallow ground water table and a lack of sanitation. Ingestion of fecally contaminated drinking water poses risks to human health, especially to children's health. Children under the age of five are most vulnerable to fatal consequences of diarrheal disease.

This study monitored for incidence of diarrheal disease in 171 randomly selected households in Khorezm region. Thirteen percent of the survey population (n = 1148) was aged under five years and 22 % under 15 years. The survey took place from May till August 2003 and in February 2004. A three-stage sampling strategy taking into account health indicators, drinking water sources and socio-economic indicators was used. For the monitoring of diarrheal disease a weekly collected diarrhea diary was used. During the twelve-week summer survey a questionnaire on drinking water sources, drinking water storage, drinking water treatment, household's health related behavior, diarrhea, personal hygiene and child care was asked. Twice during the survey period the drinking water storage vessels and the toilets of every household were checked for hygiene conditions. At the same time forty households were weekly checked for microbial drinking water quality.

In 54% of the households lived children under seven, who were cared for by mothers in 84% and grandmothers in 16%. The number of meals served to the children ranged from one to six with a median of 3.5. Out of 189 children aged under six only 12 boys and eight girls went to kindergarten. The median age of the 44 children breast-fed was one year and ranged between 0.08 and 52 months. Only one child aged 11 months was exclusively breast-fed. Two children did not receive additional food and three children no additional fluids except for mother's milk.

In the period between 1991 and 2002, due to official registration all acute intestinal infections peaked in July. However, this could not be confirmed. Active monitoring results turned out constantly high incidence rates for the entire summer period and lower but still high incidence rates for winter. In summer the

disease burden peaked with 8.4 episodes per person year for those aged under two, dropping off to 1.4 for children aged between 2 and 5. For the remaining age groups episodes per person year fluctuated between 1.5 and 1.8 (see Figure 1). Overall diarrhea incidence per person year for children aged up to five years old was 3.4 episodes per person year. In winter the same trend for age distribution was determined with five episodes per person year for the youngest age group and within a range from 0.94 to 1.55 episodes per person year for the other age groups. The overall incidence per person year for children up to five years was 2.5 episodes per person year.

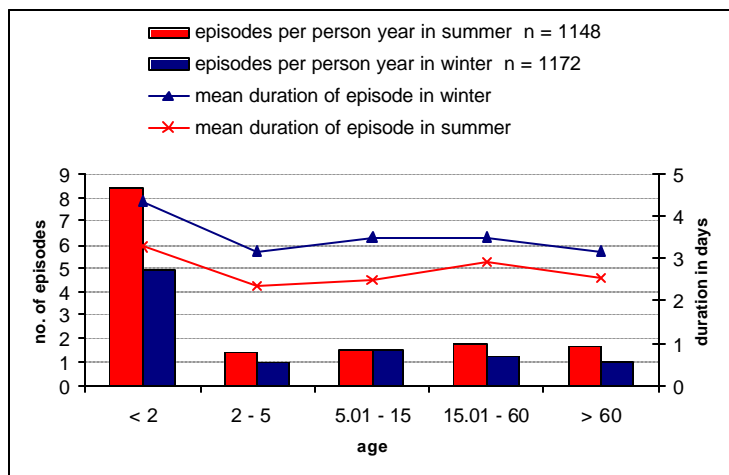


Fig.1: Person-time incidence year<sup>-1</sup> according to age strata