

# Comparative aetiology of childhood diarrhoea in Kakamega and Kiambu Districts, Kenya.

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## Abstract:

Two hundred diarrhoea specimens collected during January to February 1988, from rural children aged 0 to 60 months in Kakamega District were examined for bacteria, parasites and rotavirus. The results were compared with a sample of 184 diarrhoea specimens matched for month of collection, taken from data collected in the same manner from children in Kiambu District. The mean ages of children in the 2 samples did not differ significantly. There were significant differences in the prevalence of specific potential pathogens isolated in the 2 areas. Notably, *A. lumbricoides* and rotavirus were more common in Kakamega, while *G. lamblia*, *Entamoeba histolytica*, *Trichomonas hominis*, *Cryptosporidium* sp., *Hymenolepis nana* and EPEC were more common in Kiambu. There was no difference with respect to prevalence of *Campylobacter* sp. or *Blastocystis hominis*. Factors which were probably important in determining aetiological differences included climate, water sources, animal contact and crowding. The differences highlight the fact that general predictions about aetiology cannot be made from isolated studies. PIP: A total of 200 loose or watery specimens of diarrhea collected during January and February 1988 from rural children aged 0 to 60 months (mean age of 17.9 months) in Kakamega District, Kenya, were examined for bacteria, parasites, and rotavirus. The results were compared with data from a sample of 184 diarrhea specimens collected during January and February 1986, in the same manner from children with a mean age of 19.7 months in Kaimbu District. Complete investigations were accomplished in 140 of 184 specimens in the Kiambu sample. The most common organism in the Kakamega sample was *A. lumbricoides* (31%) compared with *Escherichia coli* (EPEC, 26.4%) and *G. lamblia* and (26.1%) in the Kiambu sample. There was no *Cryptosporidium* or *Hymenolepis nana* isolated in the Kakamega sample, while their frequencies were 2.7% and 3.8%, respectively, in the Kiambu sample. *A. lumbricoides* and rotavirus were significantly more common in the Kakamega sample, while all the protozoa, including *G. lamblia*, *Entamoeba histolytica*, and *Trichomonas hominis*, were more commonly isolated in the Kiambu ample. The Kiambu sample involved significantly more persistent diarrheas: more than 8 days (18.8%) than the Kakamega sample (3.5%) ( $p < 0.001$ ). A total of 44/140 (31.4%) of diarrheas were negative for potential pathogens in the Kiambu sample compared with 67/200 (33.5%) in the Kakamega sample. Mixed infections were common in both samples in which pathogens were isolated, with 53/133 (39.8%) in Kakamega being mixed, compared with 51/96 (53.1%) in Kiambu. One specimen in Kakamega had 5 potential pathogens (rotavirus, EPEC, *C. lamblia*, *A. lumbricoides*, *B. hominis*), while 1 specimen in Kiambu harbored 7 (EPEC, *Shigella*, *Campylobacter*, *E. histolytica*, *T. hominis*, *G. lamblia*, *B. hominis*). The community etiology of childhood diarrhea appears to be influenced by many factors which encourage direct fecal-oral transmission including climate, water sources, animal contact, and crowding.

