PRELIMINARY RESULTS ABOUT THE HEALTH IMPACT OF A WATER AND SANITATION PROGRAM IN TANGIER (MOROCCO)

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Introduction

Water and sanitation is one of the primary drivers of public health. Health status is closely related to the quality of drinking water (water-borne diseases), to its scarcity (waterscarce diseases) and to the efficacy of wastewater treatment. A very large water program was designed for the 2004-2009 period to improve water supply and sanitation coverage in the urban coastal districts of Tangier (750,000 inhabitants). At the same time, a longitudinal study was undertaken to assess the health benefit of this program and is ongoing (final study results are expected for 2010).

Methods

An epidemiological register was implemented in 15 health facilities in order to follow the incidence of three potentially water-related diseases: diarrhoea in children under 5 years, conjunctivitis and skin infections in the overall population.

Simultaneously, twice-yearly surveys were conducted in two pilot districts (Dhar El Mers, M'Rabet) which had no water supply other than wells/fountains nor wastewater systems, at the beginning of the study. Every 6 months, 70 households (≈ 400 people) were questioned to qualify water use, hygiene practices, water preservation methods, exposure to sea bathing. Samples of drinking water were also collected for microbiological analyses.

Results

Available data were collected before and during the implementation of the water supply and waste water system. If the number of dwellings supplied with water increased steadily over the period, today only 14.2% of Tangiers sewage disposal is still collected due to some delay in the opening of the major city sewage plant and of a drainage channel.

From September 2004 to June 2007, about 11,100 cases of diarrhoea in children (0.3% severe), 2,112 cases of conjunctivitis and 2,016 cases of skin infection (bacterial or fungic infection) were treated in the public health care facilities of Tangier. A clear seasonal effect was observed for diarrhoea with a decrease in winter, whereas conjunctivitis and skin infections seem to be less affected by such effect. No clear progress was made until now at the overall city level. In the two pilot districts most households were fully equipped with on tap water supply in early 2007 resulting in clear improvement in the average distance which a person should have to cart water, in families' satisfaction and in the percentage of contaminated drinking water samples. However, such improvements were not, until now, associated with a clear decrease of the incidence of water-related diseases.

Discussion

The initial situation of the Tangier area was characterized by a high level of water-related diseases and a poor quality of sea and drinking water. Some indicators had already improved in the pilot areas and in the overall city due to the first actions of the programs but no major changes were observed in the incidence of water-related diseases. Further investigations will be conducted to document changes in hygiene and bathing habits of the population. Anyway, major changes would likely occur only after the end of civil engineering works in relation with water sanitation.