

# URGENT ORAL HEALTH NEEDS OF FILIPINO CHILDREN: THE RESULTS OF THE 2006 NATIONAL ORAL HEALTH SURVEY

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## Background

The Philippines is a country of 7107 islands in the South Chinese Sea. Seven hundred of these islands are inhabited. According to the latest census in 2000 the projected population in 2005 was 85.3 million.<sup>1</sup> Only 52% of the population lives in rural areas, where the main sources of income are farming and fishing.<sup>2</sup> Due to intensive migration from rural to urban areas and due to fast growing population, cities are expanding with all known problems of rapid urbanization such as over crowded housing, lack of clean water and proper sanitation.

The population of the Philippines is very young, half of all Filipinos are younger than 21 years of age.<sup>3</sup> Consequently, job opportunities are limited, although the official unemployment rate is relatively low with 8.1% the reality is likely to be much worse and even officially 23.5 % of the national workforce are underemployed.<sup>4</sup> The average family income is 147,000 Pesos (~3000 US\$)<sup>5</sup> per year. However, there are huge inequities in income distribution. The country's annual per capita poverty threshold (= poverty line) was defined at 13,913 Pesos (~275 US\$), meaning that 40% of the population live with less than 0.75 US\$ a day<sup>6</sup>. In this context it is understandable that the daily struggle for life and food has highest priority for a large segment of the population. For this population group any health care is expensive and even basic oral health an unaffordable luxury.

## Oral Health care system

The Philippines, like many other developing countries, have reorganized the health care system with a focus on decentralization. As part of the re-engineering of the Department of Health (DOH), the Bureau for Dental Health Services was abolished and oral health was integrated into the Maternal and Child Health Cluster. While such integration would have been ideal for a truly comprehensive health care program, the high prevalence of other maternal and childhood problems sidelines all oral health concerns and allows only for a very low priority. Although the national government is tasked to develop policies and guidelines for local government units, it is not able to ensure implementation of these policies at the grassroots level. Frequent problems encountered include lack of clear priority setting, lack of appropriate programs and strategies, lack of human and financial resources – all leading to poor quality of government services, if available at all.

Dental services are offered by the private dentists in urban areas, but huge majority of the population cannot afford their services. According to different sources of information, the dental workforce consists of about 8500 to 17 500 dentists<sup>7, 8, 9</sup> but only 1750 dentists are employed in the public health care system.<sup>9</sup> It is estimated that 77% of the population has never in their life been to a dentist.<sup>10</sup>

While the Department of Health and its Local Government Units are responsible for the health of the preschool children,

adolescents and adults, the Department of Education's Health and Nutrition Unit is responsible for the health care of public school children. 92 % of the 13 million elementary school pupils visit public elementary schools. The Health and Nutrition Unit of the Department of Education has employed 640 school dentists. In average one dentist is responsible for oral health of 18,640 students. Salaries of the dentists are provided by the National Government, but funds for supplies and consumables are not available. The annual budget for school health per child is less than 2 Pesos (~0.04 US\$) and this money is mostly spent on financing staff workshops and on transportation of doctors, dentists and nurses to visit the schools for mass screening – but hardly anything is spent on treatment or prevention.

Funding for necessary medical and dental supply has to be requested from the Local Government Units and from various donors such as the industry, churches, Rotary and Lions Clubs, banks and NGOs. Depending on the energy and the relations of the local school health personal the fundraising is more or less successful. These essential restrictions of the current school health care system result in a lack of effective preventive measures and health care services. As a consequence the general and oral health status of Filipino children is alarming, with tooth decay ranking first and outranging the combined rates of other diseases in the country.<sup>11</sup> Toothache is common and is the main reason for absenteeism from school.<sup>12</sup>

## The National Oral Health Survey 2005/2006

From November 2005 to January 2006 the Department of Education (Dep Ed), conducted a representative National Oral Health Survey among the public school population of the Philippines. The survey was technically supported by the College of Public Health of the University of the Philippines and the WHO Collaborative Centers in Jena, Germany, and Nijmegen, the Netherlands, and financial supported by INWENT Capacity Building International, Isomalt, both Germany and Ivoclarvivadent, Liechtenstein. The aim of the survey was to create a sound data base for appropriate strategic planning and for evaluation of existing strategies. The survey was coordinated by Dr. Bella Monse, a German dentist, who has been working for more than 3 years under the German Government funded CIM Integrated Expert Program as consultant to the Department of Education.

## Methodology

Five survey teams, consisting of two dentists and two recorders traveled the country and carried out all examinations. All examiners were trained and calibrated during one week. Four randomly selected schools (two rural, two urban) were selected in all of the 17 regions of the country. In each of the schools thirty 6-year old and thirty 12-year old children were examined according to the WHO oral health survey standard.<sup>13</sup>



Examination during the National Oral Health Survey

Data was also collected on caries prevalence, experience and severity, dental infection, dental trauma, fluorosis and periodontal status.

In order to assess the impact of oral health on quality of life all children were asked if they had a problem in their mouth at the moment of examination.

Data on the broader general health context was collected as well by measuring the nutritional status (BMI for 12 year old children) as well as hygiene deficiency related symptoms such as prevalence of lice in the hair, skin diseases (infected mosquito bites, scabies, infected wounds), or dirty and long fingernails. Furthermore, water samples were taken from each village, where the survey was carried out in order to determine its fluoride concentration.

## Results

Results of the survey revealed that 97.1 % of 6-year old Filipino children suffer from dental decay while 84.7 % show already symptoms of dental infection, such as pulp involvement, ulceration, fistula and abscesses. The mean dmft was 8.4 (8.0 dt, 0.4mt, 0.0ft); in average 3.4 of these decayed teeth showed pulp involvement, traumatic ulceration caused by dislocated root-fragments, fistulae or abscess. In the just erupted permanent teeth the DMFT was already 0.7, all on D component. No teeth were filled in both dentitions.

20% of the children in the 6-year old age group reported a current oral problem in their mouth.

The situation for the 12-year old children was not much better. Caries prevalence was 78.4% and the mean DMFT

was 2.9. Nearly all decay is untreated, just 7% of the whole caries burden is treated by extraction, reflected by the 0.2 missing component of the DMFT index. No teeth were filled. 49.7% of the children suffer from dentinogenic infections (pulp involvement, fistulae, and abscesses). In average every examined child in this age group had one tooth with pulp involvement, fistula or abscess. 16% of all children reported to experience oral problems in the time of examination.

The prevalence of dental fluorosis was low with 1.6%. The prevalence of moderate and severe cases is less than 1% nationwide. In the areas examined fluorosis is not a problem. This finding is in line with the fluoride concentration found in the drinking water. 131 samples of water were collected and categorized according to WHO recommendation.<sup>14</sup> 126 samples showed fluoride concentration below optimal (<than 0.5 ppm) only 4 samples showed optimal concentrations for hot climate (0.5 ppm – 1 ppm) and only one sample presented a slightly higher fluoride concentration of 1.2 ppm.

The results of the survey show a very high burden of untreated dental diseases among Filipino school children. In addition, one third of all examined children showed evidence of lice in their hair, half of the 6-year old and 36% of the 12-year olds had long and dirty fingernails which is usually associated with intestinal parasites. The prevalence of skin diseases was about 15 % for both age groups.

Furthermore, it was found that 27.8% of the children were underweight, only 1.1% presented a BMI above normal. This finding is exactly opposite compared to the average nutritional status of children in most developed countries.

## Outlook and challenges

The survey results were a wake-up call for the Department of Education and the Department of Health. It revealed that current strategies of both agencies for children's oral health are not effective enough.. The results indicate that the burden of dental disorders among 6-year olds is already high by the time the children enter the public school system. This finding has serious resource and management implications for the Department of Education. The fact that the oral care index was almost zero indicated that current efforts by the Department of Education with regards to service provision have not been effective.

Improved and closer cooperation between the Department of Education and the Department of Health is needed to discuss and harmonize strategies and to join forces in order to implement effective preventive population based measures. Since October 2006, representatives of both agencies have met regularly to discuss objectives and possible strategies.

Given the high burden of disease and the limited resources, both agencies agreed that the priority should be on disease prevention and relief of pain and that the framework for future strategies should be the WHO Basic Package of Oral

Care.<sup>15</sup> Exposure to fluoride remains the most effective and only realistic measure to reduce the prevalence and severity of dental decay in the Philippines. Based on available evidence it was agreed that fluoride toothpaste is the most appropriate fluoride vehicle for the country. School and day care center-based supervised fluoride tooth brushing programmes are ongoing in pilot areas and will be expanded. A low price - high quality fluoride toothpaste is locally available; the costs per child for toothbrush and fluoride toothpaste are about 15 Pesos (~ 0.30 US\$) per year. It will be a key challenge for both agencies and all stakeholders, including multi-national toothpaste companies to develop a sustainable funding system to realize the implementation of such school-based/day care center programmes.

In order to advocate for oral health in the context of basic hygiene and general health the Department of Education is currently developing an essential health care package for all children visiting day care centers and public elementary schools. The package includes toothbrush, continuous access to fluoride toothpaste, soap and fingernail cutter in school and twice annual worm control by mass de-worming of all children.

Guidelines on Oral Urgent Treatment as defined in the WHO Basic Package of Oral Care, in terms of priority setting and infection control are currently being worked on to address the high prevalence of children suffering from dental pain and absenteeism due to toothache,

A short version of the *National Oral Health Survey among the Public Elementary Population of the Philippines* is available electronically on request.

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