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The Way Forward : Construction is not Enough!

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FOCUSING RESOURCES ON EFFECTIVE SCHOOL HEALTH THE FRESH FRAMEWORK: FRESH IN PRACTICE (ZAMBIA) AND FRESH IN THE CONTEXT OF EFA

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The FRESH Framework

Ensuring that children are healthy and able to learn is an essential component of an effective education system. This is especially relevant to efforts to achieve education for all in the most deprived areas. Increased enrolment and reduced absenteeism and drop-out bring more of the poorest and most disadvantaged children to school, many of whom are girls. It is these children who are often the least healthy and most malnourished, who have the most to gain educationally from improved health. Effective school health programmes that are developed as part of community partnerships provide one of the most cost-effective ways to reach adolescents and the broader community and are a sustainable means of promoting healthy practices.

“Education for All” means ensuring that all children have access to basic education of good quality. This implies creating an environment in schools and in basic education programmes in which children are both able and enabled to learn. Such an environment must be friendly and welcoming to children, healthy for children, effective with children, and protective of children. The development of such child-friendly learning environments is an essential part of the overall efforts by countries around the world to increase access to, and improve the quality, of their schools.

Good health and nutrition are not only essential inputs but also important outcomes of basic education of good quality. First, children must be healthy and well-nourished in order to fully participate in education and gain its maximum benefits. Early childhood care programmes and primary schools which improve children’s health and nutrition can enhance the learning and educational outcomes of school children. Second, education of good quality can lead to better health and nutrition outcomes for children, especially girls, and thus for the next generation of children as well. In addition, a healthy, safe and secure school environment can help protect children from health hazards, abuse and exclusion.

Improving the health and learning of school children through school-based health and nutrition programmes is not a new concept. Many countries have school health programmes, and many agencies have decades of experience. These common experiences suggest an opportunity for concerted action by a partnership of agencies to broaden the scope of school health programmes and make them more effective. Effective school health programmes will contribute to the development of child-friendly schools and thus to the promotion of education for all.

Positive experiences by WHO, UNICEF, UNESCO and the World Bank have suggested that there is a core group of cost effective activities which can form the basis for intensified and joint action to make schools

healthier places for children. These agencies developed a partnership for Focusing Resources on Effective School Health – the FRESH Partnership. This *FRESH* Start approach was launched at the World Education Forum in Senegal, April 2000. Since the launch, this partnership now also includes the Partnership for Child Development (PCD), Education International (EI), the Education Development Centre (EDC) and an increasing number of agencies, organizations and governments that support this approach.

The core framework contains four components, each already recommended by the participating agencies, that capture the best practices from program experiences. These are:

- Health-related school policies
- Provision of safe water and sanitation
- Skills-based approach to health, hygiene, and nutrition education
- School-based health and nutrition services

Supporting activities that provide the context in which the interventions can be implemented include:

- Effective partnerships between teachers and health workers
- Effective partnerships between the education and health sectors
- Effective community partnerships
- Pupil awareness and participation

The FRESH framework is now regarded by an ever-growing number of international donors, agencies and other stakeholders as an effective framework for school health. The FRESH approach to school health programming has now been adopted by more than 20 countries in Africa and over a dozen in Asia and elsewhere in the world.

The CHANGES school health and nutrition programme in Zambia

An example of a national school health programme that is currently being implemented, using the FRESH framework, is the national SHN programme in Zambia. The programme is the Zambian Government's Ministry of Education's National School Health and Nutrition Programme, known as CHANGES. CHANGES stands for: Community-based Health, AIDS, Nutrition, Gender and Equity in Schools.

CHANGES has four key elements:

- The Programme - using the FRESH Framework.
- Enabling Partnerships, at local, district, provincial and national levels, which are essential for the implementation of the programme.
- The Impact of the programme on the children's health, nutrition and educational status is monitored at key stages.
- The programme also helps to build capacity and to guide the way for scaling up towards full national coverage.

Using the FRESH framework, the CHANGES programme in Zambia began in Eastern Province, with preparatory work being carried out in the year 2000. The first step was to carry out a Situation Analysis, to determine what were the key health and nutrition issues for school age children. The main problems that were found included:

- High prevalence of parasitic worm infection - mainly hookworm (55%) and *Schistosoma haematobium* (48%),
- Anaemia (29%),
- Vitamin A deficiency (36%),
- Malaria,
- Malnutrition,
- Inadequate health, hygiene and nutrition education in the majority of schools,
- Inadequate access to safe water and sanitation facilities.

In the light of the situation analysis, the interventions selected included:

deworming (using albendazole for hookworm and praziquantel for schistosomiasis), iron supplementation and vitamin A supplements – all given by the teachers. In addition to this, skills based health and hygiene education was begun, and working with UNICEF and the local WASHE committees, a program was started to ensure that all the schools would have adequate water and sanitation. Schools and local communities were also encouraged to apply for small grants that were available for microprojects – such as improving community water and sanitation facilities.

To enable these interventions to be implemented effectively, it was crucial that they were guided by sound operations research. This included the design and validation of a self reported health questionnaire, in the local language – which in Eastern Province is Nyanja. Although children were asked about a range of health conditions, the main purpose of the questionnaire was to establish whether they had urinary schistosomiasis. This type of questionnaire has already been used successfully in a number of countries, including a large scale programme in Tanzania. However, for it to be reliable and successful, it is essential that it is developed in conjunction with teachers and local people, who can advise on local terms for particular health conditions and diseases.

The questionnaire was validated against microscopy study of eggs in urine, to compare reported with actual presence of schistosomiasis. Questionnaires for *S. haematobium* generally find that prevalence is under-reported by approximately 20%. In Eastern Province, the questionnaire underestimated schistosomiasis by approximately 15%. The WHO recommends mass treatment of a school when prevalence is 50% or higher. So using the questionnaire, a reported prevalence of 35% or higher would indicate the need for mass treatment.

A tablet pole was developed for Zambia, as a quick and easy way of determining the correct dose of praziquantel, where the dose is given per kg of body weight. As height and weight are strongly correlated, instead of weighing each child, the child can stand against the pole, and the correct number of pills read off from the pole (Figure 1).

Figure 1. Development of a tablet pole for treating Schistosomiasis in Zambia

Another core element of the programme is the enabling partnerships, which bring in support and expertise to enable the programme to work at all the different levels, from National to local community. In the CHANGES programme, the partners included:

- Ministry of Education
- Ministry of Health
- Ministry of Community Development
- International and local NGOs
- WASHE (Water & Sanitation), PTAs and other community groups (esp. small grants support)
- UTH (University Training Hospital)

- UNZA (University of Zambia)
- TDRC (Tropical Disease Research Centre)
- Partnership for Child Development (Imperial College, London)
- Successful Intelligence (Yale)
- EduAction (Durban, South Africa)
- Glaxo SmithKline
- Schistosomiasis Control Initiative (Imperial College, London)

Another important aspect of the programme design was impact assessment, to determine whether the interventions were having an impact on children's health and nutritional status and was that, in turn, improving their educational achievement and their ability to learn?

To monitor these aspects of the CHANGES programme, phase 1 incorporated a 3 year longitudinal study of a subset of schools, with a rolling programme of intervention and control groups (3,800 children). Immediately after the baseline survey, a basic 'health education and life skills development' package was implemented in all control and intervention schools (November 2001). Children in the intervention schools also received a package of drug interventions, involving praziquantel, albendazole, vitamin A and ferrous sulphate. To ensure that all children received all the interventions, the control group in one year joined the intervention group in the following year and new control group was recruited.

The information that was gathered for the impact assessment included:

1. Anthropometric information:
 - Height
 - Weight
2. Nutritional information:
 - Haemoglobin levels and 3 additional measures of iron status (serum ferritin, transferrin receptor, C-reactive protein)
 - and Vitamin A status (in Yrs 1&2)
3. Parasitological information:
 - Stools
 - Urine
4. Cognition and educational achievement assessment

Deworming for both hookworm and *Schistosoma* was found to have a good effect on reducing prevalence at 12 month follow-up, reducing prevalence from 55% to 16% for hookworm and from 48% to 13% for urinary schistosomiasis. (Figure 2).

Figure 2. Prevalence of hookworm and schistosomiasis, at baseline and 12 months after deworming. Year 1 of CHANGES programme

Even more striking was the dramatic effect of repeated treatment. The second treatment with praziquantel, in year two, reduced the prevalence of Schistosomiasis to just 1%. So repeated annual treatments have a very significant effect on reducing prevalence to almost negligible levels. (Figure 3) The same pattern was found for hookworm.

Figure 3. Prevalence of schistosomiasis, at baseline and 6 months after deworming. Year 2 of CHANGES programme: Comparison of new and repeat deworming treatments.

Although analysis of iron and vitamin A status is still taking place, but the results are much less clear cut, with no clear improvement in nutritional status being shown so far. The most likely explanation for this is that the first year of this programme coincided with a wide-spread famine in much of southern Africa. With complete crop failure in Southern Zambia and much of Eastern Province for 2 years in a row, the children's general state of nutrition was so poor, that micronutrient supplements in school were just a 'drop in the ocean'. Despite this, over the following year, Hb levels were beginning to rise again.

To assess the impact of the interventions on the children's educational ability, a new test was developed by partners at Yale University, called the *Zambian Cognitive Assessment Instrument*, or Z-CAI. The test was designed to measure children's *ability to learn*, rather than their specific knowledge of, for example, Maths or English, while being relatively quick and easy to administer by teachers. Results from the Z-CAI were also highly correlated with the scores from the Grade 5 *Zambian National Assessment Tests* – but for the purpose of assessing the impact of the programme interventions, the Z-CAI was much quicker to administer than the *National Assessment Test*.

There was a highly significant improvement in performance of the intervention group compared to the control group – despite the fact that they started off with lower scores, purely by chance, as a result of the randomized assignment of schools to each group. From this it was clear that something about being in the intervention group – whether it was the deworming, the micronutrient supplements or a combination of factors – that seemed to have a very positive effect of the children's ability to learn. (Figure 4)

Figure 4. Z-CAI test scores in years 1 and 2 of CHANGES programme: Comparison of intervention and control groups.

Building Capacity is a pre-requisite for scaling up a programme. These are some of the areas in which this is being achieved for the CHANGES programme:

- Policy
 - SHN using the FRESH framework is now part of 5 year MoE strategic plan.
 - Specific school health policies are being developed
- Development of training materials for life skills (especially HIV/AIDS prevention)
- Teacher training (pre and in-service)
- Targeting and delivery of interventions
- Partnerships
- Monitoring and evaluation

The evidence of the improvement in children's ability to learn, as a result of the CHANGES programme, persuaded the MoE to commit their own funds to:

- Expand the program to another 4 Provinces by 2005
- Aim for full national coverage of the whole country by 2008

FRESH and Education for All (EFA)

Poor health and malnutrition are important underlying factors for low school enrollment, absenteeism, poor classroom performance, and early school dropout. Programs, such as those using the FRESH framework, which strive to achieve good health, hygiene and nutrition for school age children, are therefore essential to the promotion of basic education for all children.

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