rhoea. Estimated child deaths from diarrhoea fell from 4.6 million in 1980 to 3.3 million in 1990 to 1.8 million in 2004 and 1.3 million in 2008.[3]

However, since 1995 the proportion of under 5s with diarrhoea who received ORS has remained at around 35%.[3] Funding for diarrhoea-control programmes was reduced in the 1990s and the treatment was incorporated into WHO'S IMCI (integrated management of childhood illness), where health workers are told what to do without necessarily understanding why they are doing it! IMCI failed to be expanded in many national health programmes. In recent years emphasis and money have been diverted into other diseases such as malaria and HIV at the expense of the diarrhoea management programme.[3]

Despite the loss of interest and funding for diarrhoea control, research continued, particularly in relation to composition of ORS and zinc (Zn) supplements. Low osmolarity ORS results in 20% decrease in stool output, 30% reduction in vomiting, and 40% reduction in requirement for unscheduled intravenous therapy.[3] In 2002, WHO changed recommendations for treatment of dehydration in both children and adults to low osmolarity ORS.[4]

Adequate dietary Zn leads to a substantial reduction in childhood diarrhoea.[5] Zn reduces the duration of acute and persistent diarrhoea and the frequency of diarrhoea in the 2–3 months after treatment.[3,5] It also improves appetite, increases ORS uptake and possibly may reduce demand for unnecessary drugs.[5] In a study of community management of diarrhoea in New Delhi, India in 1996, the majority of children with diarrhoea were taken to a medical practitioner (as opposed to a government health facility) who prescribed drugs (antidiarrhoeals and antimicrobials) in 79% and ORT in only 27%.[6]

Since 2004, WHO now recommends Zn for 10–14 days for acute diarrhoea in developing countries comprising 20 mg tabs per day for children over 6 months and 10 mg for those over 6 months.[4] It is now available from UNICEF and manufactured in a number of developing countries. Unfortunately, the benefits of Zn are not widely appreciated by health workers and presently it is only available for a small proportion of patients.

However, all is not lost. In 2009 WHO/UNICEF produced a document *Diarrhoea: Why children are still dying and what can be done*.[5,7] This is designed to relaunch interest in management of diarrhoea in children and introduce preventive initiatives. Up until recently the main emphasis in diarrhoea programmes has been management of dehydration and maintaining nutrition, promotion of methods to actually prevent diarrhoea were considered to be impractical. The latter is now included in the new package.

The two main elements for management of acute diarrhoea are low-osmolarity ORS and Zn supplements as outlined above. It is suggested that provision of smaller ORS packets and incorporation of flavoured formulae may enhance use of ORS. In addition emphasis is given to continuing feeding, including breast feeding, use of appropriate home-made solutions if standard ORS is not available, and increased fluids generally.

The prevention package comprises five elements: rotavirus and measles immunisation, promotion of early and exclusive breastfeeding and vitamin A supplementation, promotion of hand washing with soap, improved water quantity and quality including treatment and safe storage of household water, and promotion of community-wide sanitation.

Rotavirus causes 40% of hospital admissions for diarrhoea in under 5s. Some 88% of diarrhoeal deaths are attributed to unsafe water, inadequate sanitation, and poor hygiene. Hand washing with soap and water is far more effective than water alone and has been shown to reduce the incidence of diarrhoea by 40%. The majority of homes have soap of some form. Emphasis is not only on washing hands after defaecation but also after changing the infant's nappies and before preparing food. Children's faeces carry a higher pathogen load than adults.

In developing countries, up to one in four people practice open defaecation.[7] There is now new emphasis that this is 'shameful' which it is hoped will stimulate the community's desire to build latrines and encourage assistance from private enterprise. Households are being encouraged to treat water using methods such as boiling, filtration, chlorination, and solar disinfection.

India has achieved the Millennium Development Goal for drinking water by providing 80% of the rural population with access to clean water sources. However, this needs to be sustained as water sources are being over exploited for agriculture and industry and contaminated by untreated sewage.[8]

Each new generation of health workers and parents needs to be educated in the prevention and treatment of diarrhoea. This new impulse by WHO hopefully will promote long-term interest in the control of diarrhoea which remains a major cause of childhood mortality.

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