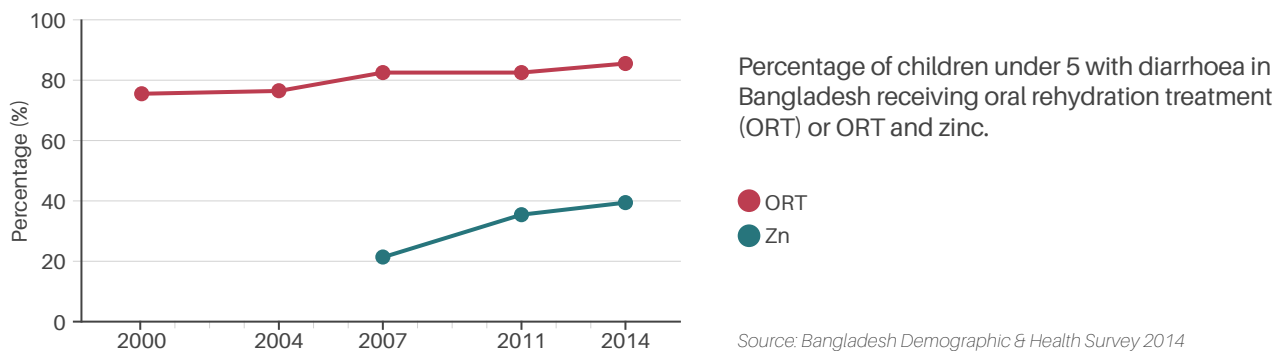


ORS and zinc use in Bangladesh

ORS: Achieving and Maintaining High-Level Coverage

Bangladesh has among the world's highest uses of ORS – 84% in 2014^[1]. This success reflects a range of factors, including the long history of oral rehydration solution (ORS) in Bangladesh, a succession of initiatives to raise population awareness and a thriving marketplace providing ready access to an affordable product through local shops and pharmacies.



Background

ORS was developed in Bangladesh and pivotal clinical trials were carried out in the country, with icddr,b playing a key role in its development and in generating evidence of its effectiveness. By the late 1970s, strong evidence had accumulated of its value in treating childhood diarrhoea, but use was limited. Over the next 30 years, ORS use was promoted through several major initiatives:

National Oral Rehydration Project (NORP): Launched in 1981 and run by the Government of Bangladesh with UNICEF funding, the NORP distributed packaged ORS, focusing on outbreaks and static health centres ('ORT corners'). In the absence of a comprehensive nationwide health centre network, it failed to reach many of the rural poor.

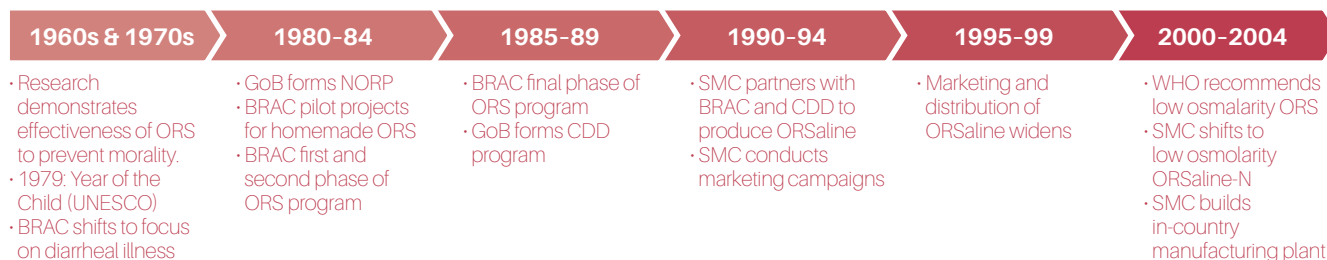
BRAC: At the same time, the non-governmental organisation (NGO) BRAC, inspired by UNESCO's 1979 'Year of the Child' initiative, began to prioritise childhood diarrhoea. With UNICEF support, it targeted mothers directly, using teams of female health workers to demonstrate how to make ORS from household ingredients – they reached some 12 million mothers by 1990.

Prepackaged ORS: By the mid-1980s, prepackaged ORS was widely seen as a better long-term option. With USAID funding, the US NGO Population Services International (PSI) began promoting ready-made ORS (ORSaline). In 1990, a Bangladesh-based non-profit, the Social Marketing Company (SMC), took on responsibility for ORSaline. SMC undertook extensive marketing activities, again focused on mothers. In 2003, SMC introduced ORSaline-N in response to new WHO guidelines and ORSaline-Fruity to cater for those put off by the taste of existing products.

Control of Diarrhoeal Disease programme: In 1989, the NORP evolved into a national Control of Diarrhoeal Disease programme, which promoted ORS use through government facilities. Since 2002, diarrhoea control activities have formed part of a nationally implemented integrated management of childhood illness (IMCI) strategy.

Collectively, these activities have underpinned a steady increase in ORS use. Affordable ORS, produced and distributed by multiple companies, is readily available throughout the country. Its use is embedded in public consciousness, reinforced by private sector marketing activities as well as promotion of ORS use by public sector community clinics and community health workers.

Approach to scale-up. Timeline of ORS scale-up (from Bangladesh ORS Case Study, University of Washington Global Health START Program, 2013).



Enabling environment

- Possibly because ORS had its roots in Bangladesh, the Government was an early supporter of its use and has strongly and consistently supported scale up.
- The Government supported BRAC and SMC's activities, and made ORS available for public health providers (though this accounts for only around 10% of current ORS use).

Ensuring supply

- By the late 1990s, owing to the convenience, availability and affordability of prepackaged ORS, 80% of users were purchasing ORS packets from grocery stores or pharmacies, even though they were available at public health facilities.
- SMC established an effective distribution system (and manufacturing facility in 2004). In 2011, SMC sold around 300 million sachets (total production in Bangladesh in 1997 was 52 million sachets).
- Around 30-40 different brands of ORS are now available in Bangladesh.

Increasing demand

- BRAC's strategy of targeting users (mothers) directly, rather than working through the health system, had a significant impact on ORS awareness.
- Similarly, SMC's marketing campaign focused on mothers; its extensive campaigns spanned a wide range of media, including inspirational television commercials. During the 1980s/90s, its annual marketing spend was some US\$1m and is now around US\$500,000.
- In the early 1990s, the Government of Bangladesh and BRAC promoted ORS within communities, and (with the Grameen Foundation) created business opportunities for women to buy and sell ORS sachets. Other bodies, including UNICEF and icddr,b, also promoted ORS use.

Mediators/providers

- Government clinics provide ORS free of charge, but account for only 10% of total use.
- SMC targeted small-scale private providers - which outnumbered public or NGO providers and were convenient, and hence more widely used by families with a child with diarrhoea.
- SMC organised training for a range of providers, including pharmacists/drug sellers and rural unlicensed practitioners.
- Promoting use of ORS is integral to IMCI approaches adopted by government clinics in 1998. The government has established around 12,000 community clinics, providing staff with training on management of diarrhoea and use of ORS and zinc.

- ORS and zinc are also promoted by some 100,000 BRAC volunteer community health workers (Shasthya Sebika), supervised by 10,000 BRAC employees (Shastha Karmi).

Economics

- The Government's and BRAC's initial scale-up work was entirely donor funded.
- SMC's initial work was initially supported by USAID. It is currently operating sustainably, recovering 100% of its non-programme-related costs through product sales.
- ORS is now a mature market, with high and stable usage.

Factors underpinning successful scale-up of ORS in Bangladesh

- Political stability and political will, including a long-term commitment to promote ORS and child health more widely (e.g. through the Control of Diarrhoeal Disease programme and implementation of IMCI).
- The Bangladesh Government's willingness to engage constructively and flexibly with the research community, NGOs, development partners and private sector organisations.
- Commitment of the Bangladesh Government to wider social and economic development, and progress towards MDGs such as greater education and empowerment of women, roll out of IMCI and fertility reduction.
- Long-term, large-scale awareness-raising, which embedded ORS in the public consciousness and were built on through product-specific marketing campaigns.
- A local centre of excellence in health research, icddr,b, which provided expert advice to support policymaking, including local evidence of impact, and practical support for rollout.
- The willingness of BRAC and others to work outside health infrastructure, which ensured that ORS use is seen as a 'domestic/household' rather than 'medical' issue.
- Similarly, SMC's targeting of users circumnavigated a weak health infrastructure and stimulated a demand that could be met through the existing retail sector.
- SMC's recognition of the importance of self-reliance, and hence its development of its own manufacturing facility and distribution through robust private sector mechanisms.
- Supportive and consistent messaging about ORS from all parties.

Zinc: The SUZY Programme

Though a multifaceted approach based on extensive formative research, the SUZY (Scale Up of Zinc for Young children) programme significantly increased awareness and use of zinc in Bangladesh. Thanks to the infrastructure and awareness established by SUZY, zinc use has grown to 38% by 2014^[2].

Background

By the late 1990s, it was clear from work undertaken by icddr,b and other research that therapeutic zinc could shorten the duration of diarrhoea and prevent future cases. A large icddr,b clinical trial identified a 50% reduction in mortality associated with zinc use^[3].

SUZY: On the basis of these and other findings, the Government of Bangladesh sanctioned a national scale up programme, funded by the Bill & Melinda Gates Foundation. Launched in 2003, SUZY was led by icddr,b in partnership with the Ministry of Health and Family Welfare (MOHFW) and Acme Laboratories.

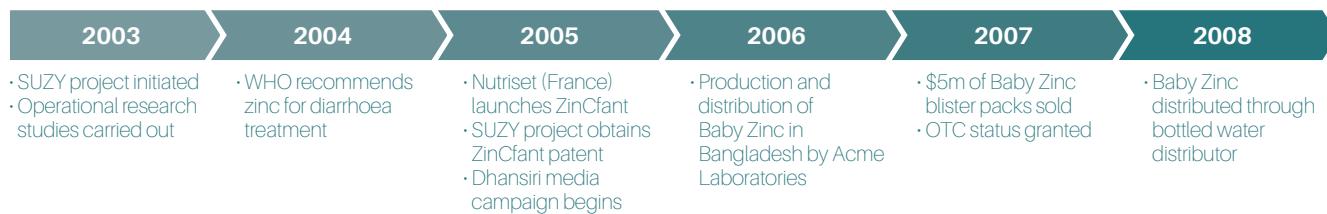
A key feature of SUZY was its emphasis on market research to shape the design of the rollout programme, and operational research to monitor its effectiveness and address deficiencies. It adopted a research-driven behaviour change model

focused on consumers (primarily mothers), as well as multi-pronged strategy addressing all factors likely to influence production, distribution and use of zinc, including the national policy context.

In particular, as early research identified that families typically sought help from private providers rather than public health facilities, these were targeted as the key intermediaries.

Between 2006 and 2008, SUZY achieved significant increases in awareness of zinc (from 5% to 50% in rural areas and to 90% in urban non-slum areas), although actual usage increased less (to 10% in rural areas and 25% in urban non-slum areas). Since the end of the programme, these relatively high usage figures have been sustained and even shown signs of growth (to 38% in 2014)^[4]. By converting sufficient 'early adopters', SUZY may have established zinc usage above a threshold at which use is socially embedded and self-sustaining.

Approach to scale-up. Timeline of zinc scale-up (from Bangladesh ORS Case Study, University of Washington Global Health START Program, 2013).



Enabling environment

- SUZY was undertaken with Government partners. Two committees were established to support scale up; they developed enabling policy and integrated zinc into national IMCI guidelines.
- The national Paediatrics Association was also involved and endorsed use of zinc (although in retrospect it should have been engaged earlier in the project).
- As it became clear that distribution through pharmaceutical company channels was limiting supply, zinc was granted over-the-counter (OTC) status, facilitating distribution through pharmacies and grocery stores. Pharma has limited interest in zinc as profit margins are low.
- Regulations were changed to allow zinc to be advertised on national television – the first time a drug was allowed to be marketed in this way.

Ensuring supply

- Consumer research identified tablets as the preferred formulation. Tablets were being produced by a French company, Nutriset. The MOHFW was keen to establish production and distribution in Bangladesh, and initially

SUZY used raw materials from Nutriset's suppliers to manufacture tablets. In 2005, SUZY bought the patent from Nutriset, and Acme Laboratories were selected after a competitive process to produce the tablets locally, under the brand name 'BabyZinc'.

- Distribution initially focused on the public health system (not widely used by families with children with diarrhoea) and pharmacies. After OTC status was granted, distribution was expanded to local shops, linking to Acme's distribution system for bottled water.
- Independently, in 2008 SMC began distributing zinc to chemist shops, although consumer demand was initially low. SMC is planning to introduce an ORS-zinc combination product in 2016.
- Zinc is available free from public facilities, but this accounts for limited zinc usage.
- Zinc has been placed on Bangladesh's essential medicines list, and is due to be made available at government facilities and in 12,000 community clinics, although the Government has struggled to secure adequate supplies. UNICEF has provided some support for government distribution of zinc in its project areas.

Increasing demand

- SUZY placed great emphasis on marketing to raise awareness and increase demand, informed by extensive market research (e.g. to identify key perceived benefits, willingness to pay).
- A local company, Dhansiri Media, developed an extensive cross-media campaign; television and radio (including a popular soap opera) were identified as the most cost-effective ways of reaching rural populations.
- Messaging also emphasised the importance of combining zinc with ORS rather than using it as a replacement. (There is no evidence that zinc use has impacted negatively on ORS.)
- In the first year, US\$5m of BabyZinc packs were sold, well above forecast levels (US\$3m).
- Multiple companies are making and distributing zinc in Bangladesh, although it is not as widely available as ORS.
- As part of the IMCI approach, zinc usage is promoted through one-to-one counselling by community health workers of mothers on management of infants with diarrhoea.

Mediators (health providers etc.)

- Acme Laboratories developed materials to enable its sales representatives to promote zinc among private sector providers (licensed and unlicensed).
- Public providers also received training (as did a proportion of informal providers nationwide – 2000 or so attended ‘train the trainers’ events); the goal was to cascade best practice through the system, with informal providers likely to follow the practice of public providers. A change in Government policy was required to allow work with providers in the informal sector (village doctors).
- Information on zinc use is provided to shop sellers using the bottled water distribution system.
- Zinc use has been integrated into IMCI guidelines for public health facilities and community clinics, and village doctors receive training on ORS and zinc use.
- BRAC did not initially prioritise zinc, concentrating its efforts on micronutrient powders (which include zinc). Up to 100,000 BRAC volunteer community health workers (Shasthya Sebika), supervised by 10,000 BRAC employees (Shastha Karmi), are now more actively promoting zinc.
- A national scale up plan for diarrhoea and pneumonia, currently in WHO-funded pilot phase, may make zinc more widely available at public facilities.

Economics

- The SUZY programme cost around US\$8m, primarily funded by the Bill & Melinda Foundation (including US\$1.5m for promotion, US\$1.5m for research and US\$250,000 for monitoring).
- UNICEF has provided some support for zinc distribution to public health facilities.
- The market may have become self-sustaining, with multiple products available, albeit not universally, and use promoted by public and private sector providers.

Factors underpinning success of SUZY programme in Bangladesh

- Extensive formative research, which identified gaps in knowledge and provided key understanding of consumer attitudes and behaviour, shaping design of the rollout programme.
- Piloting and operational research, which provided opportunities to adapt activities in light of progress achieved.
- icddr,b provided local expertise to achieve buy-in, provide expert advice, integrate research into rollout design and operational management; icddr,b continues to provide advice to enhance zinc availability through public facilities.
- Locally generated evidence of safety and efficacy proved influential in gaining government support for a rollout programme.
- Active Government engagement created a supportive policy environment, and ensured public sector activities aligned with the programme’s goals.
- Targeting of the private sector, by far the most widely used service in Bangladesh; this approach also provided an opportunity to embed sustainable practices.
- Mass marketing, particularly through television and radio, was extremely effective at rapidly raising awareness among care-givers.
- The shift to OTC status expanded distribution channels and, as with ORS, helped to establish zinc as a ‘domestic/household’ rather than ‘medical’ product.
- The programme was relatively short and may have ended too early; later work could have focused more on changing consumer behaviour rather than just raising awareness. Nevertheless, the programme may have promoted zinc use past the threshold at which usage is socially embedded and grows through word of mouth, without the need for continued external inputs.

References: ^[1] Bangladesh Health and Demographic Survey 2014. ^[2] Bangladesh Health and Demographic Survey 2014. ^[3] Baqui, A. R. Black, et al. (2002). “Effect of zinc supplementation started during diarrhoea on morbidity and mortality in Bangladeshi children: community randomised trial.” *BMJ* 325. ^[4] Larson CP, Saha UR, Nazrul H. Impact monitoring of the national scale up of zinc treatment for childhood diarrhea in Bangladesh: repeat ecologic surveys. *PLoS Med.* 2009;6(11):e1000175.

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