

ORS Case Study

Tanzania

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Disclaimer

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1. Context

Tanzania is the largest country in East Africa, covering over 940,000 square kilometers, including the islands of Mafia, Pemba and Zanzibar. Approximately 25% of the country is composed of national parks, game and forest reserves. The population is estimated at 43.6 million in 2012, over three-quarters (77%) of whom live in rural areas.¹ The population is unevenly dispersed throughout the country, with the population density ranging from 1785 per km² in Dar es Salaam to 12 per km² in Lindi region.² The per capita GDP (PPP) is \$1286.³ In addition to HIV (prevalence ~7%), malaria, pneumonia and diarrheal diseases are the main health problems in Tanzania.

Tanzania's reductions in infant and child mortality are among the greatest in Sub-Saharan Africa. Tanzania reduced under-five mortality by 51% between 1990 and 2010, from 155 to 76 deaths per 1000 live births, suggesting that the country could reach their MDG 4 target. Despite progress in child survival, Tanzania ranks 10th among 24 developing countries with the largest numbers of children under five who are moderately or severely stunted.⁴ The high stunting prevalence in Tanzania (44%) is not surprising given that Tanzania is one of ten countries with the highest diarrhea burden.

Administratively, the country is divided into 21 regions on the mainland and five regions in Zanzibar, subdivided into 129 districts, including 10 in Zanzibar. The public health system has a network of hospitals, health centers and dispensaries (clinics), with 6,000 to 10,000 people served by each facility.⁵ The vast majority (90%) of the population lives within 5 km from a health facility. Tanzania suffers from inadequate staffing of health facilities: there are 0.1 physicians and 2.4 nurses and midwives per 10,000 people, much lower than regional average of 2.2 physicians and 9.0 nurses and midwives per 10,000 people.⁶

2. Health system successes and failures

Maternal and child health services were established in Tanzania in 1974 and the Expanded Program of Immunization (EPI) was initiated the following year. Tanzania approached diarrhea control by establishing Diarrhea Treatment Corners, or DTCs, in every facility nationwide. In the early 1980s the World Health Organization (WHO) recommended oral rehydration solution (ORS), prepared by dissolving ready-made packets of ORS in water. At that time, the Control of Diarrheal Disease Program (CDDP) in Tanzania was, as one key informant described it, "highly committed to promotion" of oral rehydration therapy (ORT). One strategy utilized by the CDDP was to educate school children, with the expectation that they would relay the messages home and educate their parents about ORT. Recommended home fluids (RHF) were to contain sodium and glucose or sucrose but, at the country level, inconsistent

¹ National Bureau of Statistics [Tanzania] and ICF Macro. (2011) Tanzania Demographic and Health Survey 2010.

² MOHSW & WHO. (2007) Tanzania service availability mapping : 2005–2006.

³ World Bank (2012) World Development Indicators: Tanzania. Accessed May 17, 2012. Available at: <http://data.worldbank.org/country/tanzania>.

⁴ UNICEF. (2009) Tracking progress on child and maternal nutrition: A survival and development priority.

⁵ National Bureau of Statistics [Tanzania] and Macro International Inc. (2007) Tanzania Service Provision Assessment Survey 2006.

⁶ WHO (2012) United Republic of Tanzania: health profile. Accessed June 4, 2012. Available at: <http://www.who.int/gho/countries/tza.pdf>.

messaging about the requirement to include both salt and a carbohydrate may have contributed to the use of inappropriate treatment practices.

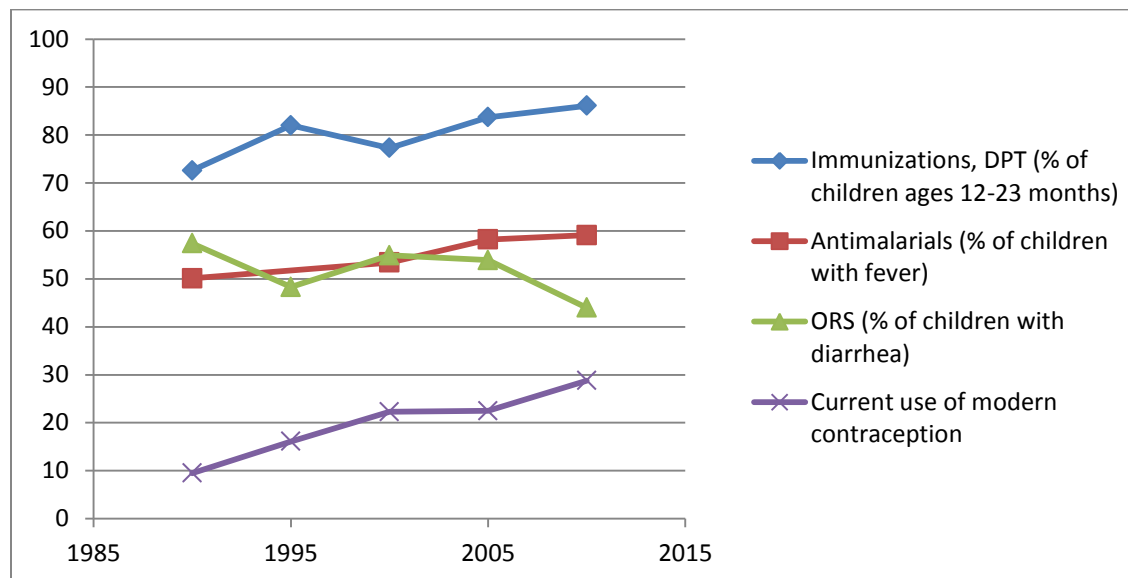


Figure 1. Health services utilization in Tanzania, 1991-2010. (Data from the Tanzania Demographic and Health Surveys conducted in 1991-92, 1996, 1999, 2004-05, and 2010.)

Health services were decentralized with Health Sector Reforms (HSR) started in 1994, giving local districts increased autonomy and control over their own health budgets and plans. Children under the age of five and pregnant women are exempted from fees at government health facilities but, in practice, patients pay for drugs and supplies when they are out of stock at the facility.⁷

The major focus of the HSR is organizational reforms such as integration of vertical health programs into the general health sector. Tanzania adopted the Integrated Management of Childhood Illness (IMCI) strategy in 1996 to improve the quality of care provided in health facilities for the major causes of child mortality. Operational research was conducted to develop counseling and education cards to be used by providers with caregivers, and materials were translated into Swahili, the national language. However, according to key informants, training and supervision were limited due to lack of funding.

Tanzania was one of five countries included in the Multi-Country Evaluation of IMCI Effectiveness, Cost and Impact (MCE) funded by the Bill & Melinda Gates Foundation (BMGF). The main findings of the MCE were that children in IMCI districts received better care than children in comparison districts.⁸ Children were checked for the presence of diarrhea and correctly classified more frequently in IMCI districts than in comparison districts. For children who needed an oral medication (ORS and/or antibiotic and/or anti-malarial) and were prescribed one, 96% of caregivers in IMCI districts were counseled on how to administer the treatment, compared with only 18% of caregivers in comparison districts. ORS use was

⁷ Manzi F, et al. 2012.

⁸ Tanzania IMCI Multi-Country Evaluation Health Facility Survey Study Group (2004) The effect of Integrated Management of Childhood Illness on observed quality of care of under-fives in rural Tanzania. Health Policy Plan 19: 1-10.

more common on average in IMCI than in comparison areas.⁹ IMCI was reportedly included in the Comprehensive Health Plan of every district in the country in 2004, yet data from a 2004 WHO Health Facility Survey shows a lag in implementation (**Figure 2**).

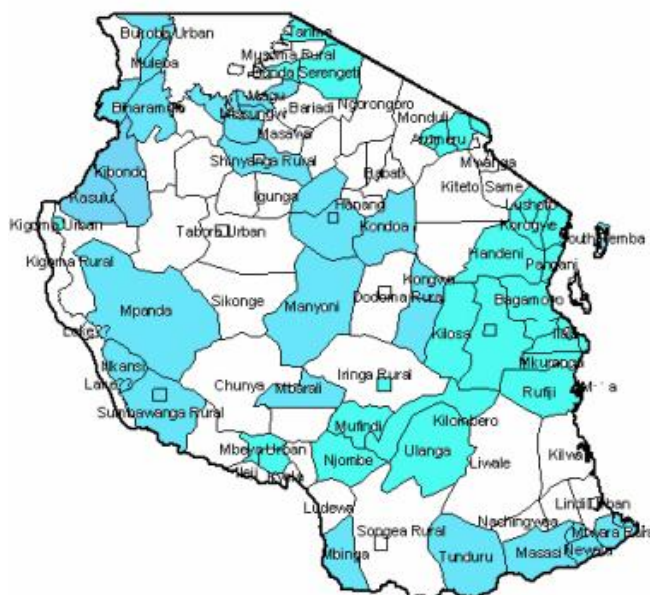


Figure 2. Districts implementing IMCI in Tanzania, June 2003. Shaded areas indicate IMCI implementing districts (105/113). (Source: WHO IMCI Health Facility Survey-3, June 2004)

The health facilities in Tanzania remain highly utilized today but it appears that the performance of health workers as was observed during the MCE has deteriorated without training and supportive supervision. While Tanzania had higher rates of ORS use than most other African countries up to 2005, the rate has declined sharply in recent years (from 53.9% in 2005 to 44.0% in 2010). What is most perplexing about this trend is that caregiver-reported knowledge of ORS has consistently been high (**Table 1**) over the past two decades, and was unchanged during the period of decline in ORS use.

Table 1. Diarrhea case management in Tanzania, 1991-2010. (Data: Tanzania DHS)

Practice or treatment provided	1991-92	1996	1999	2004-05	2010
Knowledge of ORS (% of mothers of children with diarrhea)	93.0	87.1	.*	95.5	95.4
Care-seeking for diarrhea (% of children with diarrhea taken to health facility or provider)	59.5	56.3	63.2	47.0	52.6
Pill, syrup or antibiotic (% of children with diarrhea)	20.5	39.5	.	40.0	49.8
ORS (% of children with diarrhea)	57.4	48.3	54.9	53.9	44.0
Increased fluids (% of children with diarrhea)	30.4	56.6	31.9	36.4	18.2
RHF (% of children with diarrhea)	19.0	3.0	73.5	19.8	29.5

* (.) = Data not available.

⁹ Armstrong Schellenberg JR, Adam T, Mshinda H, Masanja H, Kabadi G, et al. (2004) Effectiveness and cost of facility-based Integrated Management of Childhood Illness (IMCI) in Tanzania. *Lancet* 364: 1583-94.

2. Approach to scale-up

a. Regulatory change

WHO and UNICEF made a joint recommendation in 2004 for the use of zinc and low-osmolarity ORS, along with increased fluids and continued feeding of an appropriate diet, for the treatment of diarrhea.¹⁰ With the advent of zinc, the USAID-led five-year Point-of-Use Water Disinfection and Zinc Treatment Project (POUZN) began in 2005 with the aim of revitalizing diarrhea treatment. POUZN worked with the MOHSW, the Zinc Task Force (ZTF) and the Tanzania Food and Drugs Authority (TFDA) to adopt a revised diarrhea treatment policy in December 2006 and helped build local capacity of a local pharmaceutical company. The MOHSW updated the IMCI guidelines to include the new treatment protocol and added zinc and low-osmolarity ORS to the national essential medicines list in 2007.

b. Marketing campaign (incl. approach of major manufacturers and wholesalers)

“Diarrhea treatment was essentially public-sector driven ... and for one reason or another, the public sector lifted the pedal and the rational diarrhea treatment lost speed.” It seems that the DTCs had a positive effect on increasing caregivers’ knowledge of ORS initially. One key informant commented, “Everyone knows about ORS, it’s been around for decades” but it’s not clear how people learned about ORS specifically. The DTCs instructed caregivers to use ORS but, as noted by a key informant, the following challenges were identified in getting caregivers to adopt the practice: mothers had been encouraged to prepare sugar-salt solutions; mixing ORS was a challenge due to water shortages; once the child was stabilized it was difficult to get the caregiver to continue providing additional fluids and ORS; salty taste was undesirable; caregivers’ long-standing belief in antibiotics and desire to receive a tablet for treating a sick child.

After the results from the MCE in four well-functioning districts in Tanzania, it seemed that IMCI would succeed in delivering essential child health interventions close to the population. Yet without focusing on case management at home and in facilities, IMCI couldn’t maintain or expand the progress made by the CDDP. DTCs were abandoned, leaving facilities poorly equipped to promote recommended diarrhea treatment. As one key informant summarized, “DTCs weren’t really being supported and they died away. It would be an ideal platform [for introducing zinc treatment with ORS].”

USAID launched the POUZN marketing campaign for ORS in 2005. The strategy was to advocate for rational diarrhea treatment, distribute low-osmolarity ORS and zinc treatment to public sector health posts, ensure the supply of quality zinc treatment and reformulated ORS in the private sector and generate demand among health care professionals, drug sellers and child caregivers. The target was to increase ORS use 25% over baseline.

According to a key informant, as ORS promotion depended exclusively on the MOHSW, the POUZN project tried to engage the private sector but found it challenging to ‘de-program’ the ORS producers from their dependency on government tenders, as it was ‘easy business’ for them, enabling them to invest their promotional resources in more profitable products. If the MOHSW stopped promoting ORS and demand subsequently decreased, there was no one to sustain the demand because it wasn’t picked up by the private sector, who apparently saw ORS as a public sector product.

¹⁰ WHO, UNICEF (2004) Clinical management of acute diarrhoea. New York: WHO/UNICEF.

POUZN and the MOHSW developed generic promotion and training material on diarrhea treatment. POUZN promoted ORS over the radio through the Mama Ushari radio, but the radio spots ran for a limited time (personal communication, 2012). All POUZN communication focused on promotion of ORS and zinc as a combined therapy, the program never promoted one product to the exclusion of the other. One key informant reflected, “with limited inter-personal communication it is possible the communication of a combined therapy (generic) may have not been as effective given that these are two separate products and the take home message might have been diluted.” POUZN hosted caregiver events to promote ORS including outreach to caregivers through community-based "road shows" promoting the use of zinc and ORS.

c. Development of improved product

Shelys is the local supplier of orange-flavored low-osmolarity ORS (known by the name “Save”) for the government Medical Stores Department (MSD). MSD now stocks low-osmolarity ORS nationwide and district-level management teams are responsible for ordering supplies for public health posts. Save is the commercial brand (private sector brand). A generic brand (non-flavored) is distributed to MSD under the MSD brand name for free distribution in the public sector channels. The formulation is similar among both products, however, the MSD brand is non-flavored



Although further advanced than in most of Africa, the pharmaceutical industry in Tanzania was just developing when POUZN started in 2005. Today there are seven licensed pharmaceutical manufacturers in the country; Shelys is the only one which produces ORS and zinc. Established as a private company in 1988, Shelys acquired Kenya-based Beta Healthcare to become the largest pharmaceuticals company in East Africa and exports drugs to Malawi, Congo, Zambia and Mozambique. As of March 2012, 100% of share holdings are with Aspen, the largest South African pharmaceutical manufacturing company.

One key informant noted that Interchem (Maisha brand of ORS) held the highest market share (regularly over 60-70%) for ORS in Tanzania during POUZN. A significant volume of MSD ORS was also sourced from Interchem. The company, however, is no longer in operation and thus, it is likely that a significant volume of ORS was lost in the market which the other Pharma suppliers might not have been able to cover. Without an analysis of ORS (volumes) tenders at MSD, we are unable to determine whether 1) local manufactures concentrated production to MSD to fill the gap from Interchem and the private sector suffered, or 2) MSD did not maintain volumes through new tenders to compensate for Interchems loss.

d. Improving public provider knowledge

All districts are reportedly implementing IMCI at health facility and community levels, but case management at facility level is inconsistent and there is little evidence of community and household-level initiatives to promote key family practices. While POUZN worked closely with the private sector, little focus was devoted to health worker training in public facilities. The government appears quite aware of the ineffectiveness of IMCI implementation in facilities. At the district health services level, “policies, standards and guidelines are not fully used... They may not be known or understood by health workers or not read due to the human resource crisis... Supervision within the district to facilities needs improvement... Council Management Teams are not fully informed on health policies, programs or specific activities... Quality of service delivery is compromised by delayed delivery of resources e.g. funds, medicines and supplies, equipment, shortage of skilled staff or means of transport.”¹¹

Among 605 facilities surveyed in the Tanzania Service Provision Assessment Survey (TSPA) in 2006, treatment guidelines were available in only 41% of facilities.¹² ORS packets were available in 95% of hospitals, 80% of health centers and 87% of dispensaries surveyed, but only 23% of facilities have all three necessary items for providing oral rehydration therapy: a cup and spoon, a jar for mixing and ORS packets. ORT corners were observed in only 34% of hospitals, 22% of health centers and 21% of dispensaries. MOHSW policy in Tanzania is to offer free services for all children under age five, yet 33% of facilities charged some form of user fee for sick child services.

WHO recommends that at least 60% of health workers treating sick children in facilities are trained in IMCI. The TSPA reported only 17% of facilities offer routine staff training and fewer than one in ten providers received training related to diarrhea treatment and IMCI in the year preceding the survey. Three-quarters of the service providers interviewed for the TSPA reported that they were supervised at some point during the six months preceding the survey, but no data are provided for more frequent supervision or the type of supervision provided (e.g. observation, corrective measures, etc.). As the TSPA includes a representative sample of facilities, the results provide a snapshot of the general performance of facilities that offer child health services.

A more recent survey on the quality of pediatric care, undertaken by the MOHSW, with support from the WHO’s Better Medicines for Children project funded by the BMGF, confirms the findings from the TSPA. The availability of appropriate and adequate human resources was poor, with standards for qualified staff providing care to children fully met in just one quarter of facilities surveyed.¹³ Standard treatment guidelines, essential medicines and equipment were available in 25% of the hospitals. The results reveal particularly poor clinical assessment scores in facilities. Among 69 hospitals (30.0% of all hospitals in the country) managed by the government and NGOs across 12 regions of the mainland, none of the hospitals scored higher than 75% on 82 variables measured to evaluate quality of care and 42 scored less than 50%.

¹¹ MOHSW, The United Republic of Tanzania (2008) Health Sector Strategic Plan III. Accessed May 17, 2012. Available at: <http://siteresources.worldbank.org/INTTANZANIA/Resources/HSSPIII-final-Sep17-08.pdf>.

¹² National Bureau of Statistics [Tanzania] and Macro International Inc. (2007) Tanzania Service Provision Assessment Survey 2006. Dar es Salaam: National Bureau of Statistics and Macro International Inc.

¹³ MOHSW, The United Republic of Tanzania (2010) Baseline survey on quality of paediatric care in Tanzania. Dar es Salaam: MOHSW, The United Republic of Tanzania. Accessed June 1, 2012. Available at: http://www.who.int/childmedicines/countries/QUALITY_TANZANIA.pdf.

e. Improving private provider knowledge

Drug shops (*duka la dawa baridi*) were established in the 1970s to address the poor access to medicines for much of the population.¹⁴ *Duka la dawa baridi* constitute the largest network of formally licensed outlets for basic essential medicines in Tanzania and are not legally required to be supervised by a pharmacist. Recognizing the popularity of drug shops and the need to upgrade the skills and prescribing practices of drug sellers and to ensure the quality of the drugs sold in such outlets, the government started an accreditation program in rural and peri-urban areas.

The BMGF funded Management Sciences for Health (MSH) to pilot a program in Ruvuma District from 2002 to 2006 accrediting selected Accredited Drug Dispensing Outlets (ADDOs) to sell 37 prescription drugs, as one component of the Strategies for Enhancing Access to Medicines (SEAM) Program. The SEAM Program sought to increase consumer demand for quality medicines and health services through training, accreditation, business incentives and regulatory enforcement. By the end of the program in 2005, 150 shops in Ruvuma were accredited by the TFDA.

In 2008, MSH's Strengthening Pharmaceutical Systems (SPS) Program (designed to improve governance in the pharmaceutical sector) collaborated with POUZN to train 395 ADDO dispensers and nine supervisors in the Morogoro region in the revised diarrhea treatment guidelines. The supervisors were also oriented on how to conduct supervisions in ADDOs using a standard checklist. The following year, SPS and POUZN held refresher trainings for 211 ADDO dispensers, 16 Council Health Management Team members, and nine supervisors of health zones in the Ruvuma region. Training activities included lectures, discussions, group assignments and supervisory visits to a sample of ADDOs. The trainings covered general danger signs and symptoms related to diarrhea; diarrhea case management based on IMCI guidelines; benefits of combined ORS and zinc therapy; appropriate preparation and use of ORS; how to dispense and administer zinc.¹⁵ Pre- and post-tests measuring participants' understanding of appropriate referral practices and diarrhea case management (including zinc therapy) showed test scores improved by 11% during refresher training. The average post-test score was 82%.

While the second phase of the ADDO program got underway, POUZN worked with the local manufacturer of ORS in Tanzania to increase private provider knowledge. Shelys provided information on ORS to 375 pharmacies in the country (mainly in cities) and their medical representatives still work in all districts to promote their products to physicians and providers (personal communication, May 2012). The social marketing project, T-MARC, conducted "trade activations" for ORS, in which "detailers visited rural outlets, provide marketing materials, offered deals on initial purchases, and ensured that outlets knew where supplies could be purchased and that local wholesalers had sufficient stocks to meet demand."

f. Increasing availability of supply in the public and private sector (incl. procurement)

Among public facilities that provide outpatient care for sick children and were included in the TSPA, ORS was available in 95% of hospitals, 80% of health centers, and 87% of dispensaries in 2006. The results of a more recent survey conducted by the government, along with WHO and Health Action International

¹⁴ Goodman C, Kachur SP, Abdulla S, Bloland P, Mills A. (2007) Drug shop regulation and malaria treatment in Tanzania--why do shops break the rules, and does it matter? *Health Policy Plan* 22:393-403.

¹⁵ Kimatta, et al. 2009. Refresher Training of ADDO Dispensers in the Revised Diarrheal Disease Management Guidelines and Reproductive Health Products, Ruvuma, Tanzania.

(HAI), in 2009 indicate that ORS was available in 57.4% of public outlets surveyed (n=47), 72.9% of private outlets (n=48), while in mission ORS was 68.8% available (n=48).¹⁶ ORS was not included in the HAI survey report for 2006 or 2004. The main limitation of these surveys is that a convenience sample is used; because of this bias in their sampling methods, the availability is likely even less than the already low availability reported.

A field study carried out in Tanzania to measure the availability and prices of 50 pediatric medicines revealed low availability of pediatric medicines in all sectors among the 143 facilities (public, private and NGO sectors) surveyed. In the public sector, the mean availability of medicines on the national essential medicines list was 45.3%, suggesting that patients must either go without medicines or purchase medicines in the private sector.¹⁷ The public sector procurement agency, the MSD, had only 27 of the 50 medicines surveyed in stock at the time of the survey.

The ADDOs model seems quite effective, given reports that owners of drug stores have been willing to invest to meet standards and access to basic medicines seems to have improved.¹⁸ Among 81 ADDOs visited in Ruvuma region during refresher training for ADDO dispensers in 2009, low-osmolarity ORS was available in 90% of ADDOs.¹⁹ Yet the extent to which the intervention improved coverage seems modest. When more regions are considered and the change in availability over time is examined, the ORS availability has not improved substantially with the current reach of ADDOs: the results of the East Africa Drug Seller Initiative (EADSI) for eight regions in Tanzania show that the intervention increased access to ORS by just 15% (from 72% at baseline to 83% at endline)²⁰.

USAID reported in June 2009 Shelys Pharmaceuticals has the capacity to produce about three million sachets of ORS per month. Without GMP status, WHO and UNICEF cannot approve Shelys to supply *Save* ORS as a donor-funded essential medicine. Although Shelys is the leading supplier of locally produced essential medicines, it does not have an explicit policy or strategy focused on meeting the needs of the poor by providing access to essential medicines through local production and/or affordable pricing.

g. Financing- source and mechanisms

The BMGF has supported the ADDOs with \$18.1M over three grants and 12 years by the end of the current grant to consolidate the ADDO program in Tanzania. POUZN was supported by USAID with \$1.3M over five years.

h. Pricing

¹⁶ WHO/Health Action International. International Medicine Price Workbook – Part I, released 4 September 2009.

¹⁷ MOHSW, The United Republic of Tanzania (2010) Assessment of the prices and availability of medicines for children in Tanzania. Dar es Salaam: MOHSW, The United Republic of Tanzania. Accessed June 1, 2012. Available at: http://www.who.int/childmedicines/countries/Tanzania_ASSESSMENT_PRICES.pdf.

¹⁸ Stallworthy G (2012) Trip report: Tanzania ADDOs and maternal health insurance vouchers.

¹⁹ Kimatta, et al. 2009. Refresher Training of ADDO Dispensers in the Revised Diarrheal Disease Management Guidelines and Reproductive Health Products, Ruvuma, Tanzania.

²⁰ MSH, 2011. EADSI Tanzania Results Summary. http://www.drugsellerinitiatives.org/DSI-PDF-Documents/upload/eadsi_tanzania_results_summary.pdf.

Prices indicated a good level of purchasing efficiency (on average, 0.80 times international reference price)²¹. The affordability data suggested that treatment of pneumonia, diarrhea and malaria with the lowest priced generic medicines cost between 0.1 and 0.3 days' wages in the private sector and 0.1 and 0.2 days' wages in the NGO sector, while free in the public sector. According to a formative research study conducted by USAID in 2008, when purchased in drug shops, ORS costs between 200 () and 500 TSH (~US \$0.13 and 0.33) (May 2012). Shelys' pricing for their brand of lo-ORS, Save, is 135 TSH (\$0.09) per 1 sachet (for 1 liter) (personal communication, May 2012).

3. Impact

Tanzania is among ten countries with the highest burden of diarrhea. ORS usage declined and zinc usage remains low, despite local production of these products and efforts of the DTCs, POUZN, and private sector to encourage appropriate case management and care-seeking. Although "everyone knows about ORS" in Tanzania, clearly there is a gap in knowledge and utilization. In Tanzania, caregiver reports of diarrhea treatment practices revealed *lower* rates of recommended behaviors (use of ORS and zinc) than expected by POUZN. ORS prescriptions by pharmacists did not change significantly, although ORS prescriptions increased from 36% to 52% in drug shops (ADDOs and unlicensed *duka la dawas*). Providers of all kinds continued to prescribe antibiotics at very high levels (>80%). Tanzania did not achieve its goal to increase ORS use among caregivers 25% from baseline. Treatment with ORS remained virtually the same (59% versus 58%) from baseline to endline of POUZN. While POUZN was successful in catalyzing government support for incorporating zinc treatment with low-osmolarity ORS for diarrhea and getting a local manufacturer to produce the products, only the first few steps in scale-up of ORS/zinc were taken and the momentum to do so seems to have been lost with the end of the project and funding in 2010.

4. Conclusion

Despite various efforts to scale up ORS in Tanzania, utilization has actually decreased. What is missing? According to one key informant, "focus and scale." During key informant interviews, the decline in ORS use was almost always ascribed to a decline in funding for diarrhea control programs. There was a lack of adequate training for providers in IMCI and no resources to do consistent and supportive supervision. Essentially, "IMCI failed to reach all children due to cost."

At the same time that IMCI was introduced, diarrhea treatment corners were eliminated and the country's diarrhea control efforts weakened. Nothing replaced the DTCs and there was no system of community health workers to fill the gap in improving public provider knowledge and prescribing practices. Although the benefits of DTCs have not been widely studied and documented, it can be argued that they were the mainstay of the efforts to control diarrheal disease in Tanzania, and elsewhere (India and Kenya). As suggested by one key informant, one of the underlying issues of ORS/ORT is that rehydration takes time, often a couple of hours at least. As opposed to the administration of a medicine in one swallow, taking a few seconds, rehydration is the repeated administration of a fluid to a fussy child over the course of several hours. Mothers seeking care at DTCs are forced to sit and offer fluids to the child, undisturbed and under the supervision of providers, while learning how to treat the child's illness. The alternative is that the provider gives the mother ORS, possibly with some verbal instructions, and sends them home, hoping that it's done correctly and consistently over time.

²¹ MOHSW, The United Republic of Tanzania (2010) Assessment of the prices and availability of medicines for children in Tanzania. http://www.who.int/childmedicines/countries/Tanzania_ASSESSMENT_PRICES.pdf.

The public supply chain appears to be completely broken: 57% availability of ORS, as reported in the 2009 HAI survey, is extremely low and could explain the decline. Despite the presence of a local manufacturing company, there appears to be little incentive for them to promote ORS if the public sector isn't promoting its use. One key informant commented, "ORS is not a national advocacy issue. There is a simple solution: the MOHSW/RCH unit needs to make ORS and zinc a priority. The products need to be available through channels at all levels."

While consultations and medicines for children are dispensed free of charge, low availability may lead caregivers to go without treatment or to purchase in the private sector. Ensuring sustained availability of essential medicines, including ORS and zinc, is crucial to help the country reach its goals set out as part of health sector reforms and MDG 4.

Summary

Component	Degree of success	Drivers of success/failure
Development of improved product (including pricing)	Medium	<ul style="list-style-type: none"> • Orange-flavored low-osmolarity ORS produced by local manufacturer • Should be provided free of charge from public health facilities but population forced to purchase from private sector when stocked out • Private sector supply not affordable to the majority of the population (although, given the high demand for antibiotics, which are priced much higher, this may not be a key driver)
Marketing campaign	Medium	<ul style="list-style-type: none"> • Promotion of ORS through Diarrhea Treatment Corners declined • Once DTCs were abandoned, nothing replaced them • High knowledge of ORS among mothers, but low utilization • Unclear which specific messages “worked” or not
Regulatory change	High	<ul style="list-style-type: none"> • Low-osmolarity ORS included on national Essential Medicines List and as part of IMCI guidelines
Improving private provider knowledge	Low	<ul style="list-style-type: none"> • Trained ADDO dispensers, but too few dispensers and reach not sufficient to improve coverage and utilization of ORS • Inappropriate recommendations and behaviors among providers , including high utilization of inappropriate antibiotics
Improving public provider knowledge and increasing supportive supervision	Low	<ul style="list-style-type: none"> • IMCI adopted nationwide but no investment in training and supervision • IMCI facility-focused, unclear if enough facilities where everyone trained • IMCI focal person in each district not always engaged • No community IMCI and no community health worker program • Residual effect of promoting RHF
Increasing availability of supply in the public and private sector	Medium	<ul style="list-style-type: none"> • Population density very low outside of capital city and not enough outlets selling quality essential products close to population • ORS concentrated in just one channel (pharma) • Insufficient supply, especially in public sector facilities • No cadre of community health workers to fill gap in service provision in geographic areas far removed from facilities and accredited drug outlets
Financing of scale-up	Low	<ul style="list-style-type: none"> • Lack of funding for IMCI (especially diarrhea) training and supervision • Despite donor support in country, relatively little focused on diarrhea • Demise of DTCs