

Oral Rehydration Salts and Zinc: UNICEF Suppliers and Product Range

UNICEF Supply Division

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1. Summary

- Oral Rehydration Salts (ORS) and zinc are cost-effective treatments for childhood diarrhoea. They reduce the severity and duration of symptoms and the risk of recurrence in the immediate short-term.
- Globally, there are nearly 1.7 billion cases of diarrhoeal disease annually, of which an estimated 760,000 children die annually of the disease.¹
- An estimated 60% of children suffering from diarrhoea do not access treatment with ORS and 95% of children do not access zinc.² Of those that do access ORS and zinc treatment, compliance and adherence is a challenge. In order to improve compliance, manufacturers have co-packed ORS and zinc in accordance with World Health Organization (WHO) treatment protocol guidelines to improve treatment regimen adherence.
- UNICEF is supporting governments to scale-up the use of ORS and zinc by sourcing and promoting quality co-packaged ORS and zinc in order to facilitate access in countries requiring secure and stable programme supply.

2. Background & Recent History

Diarrhoea is one of the leading causes of under-five child mortality globally, and a leading cause of under-five child malnutrition. An estimated 760,000 children die annually of diarrhoeal disease,³ of which 60% occur in just 10 countries in Asia and Africa: Bangladesh, Democratic Republic of Congo, Ethiopia, India, Kenya, Niger, Nigeria, Pakistan, Tanzania and Uganda.⁴ ORS and zinc are highly effective and affordable products that could prevent the deaths in up to 93% of diarrhoea cases.⁵ In 2005, WHO and UNICEF recommended a switch from standard ORS to an improved lower osmolarity formulation, combined with the introduction of zinc supplementation.⁶ ORS and zinc are recommended by WHO to be used collectively to ensure the effective treatment of diarrhoea (Table 1).

Table 1 WHO's Childhood Diarrhoea Treatment Protocol⁷

Age	Diarrhoea (less than 14 days AND no blood in stool)
2-6 months	2 x 20.5g/11 ORS sachets (min. 125 ml after each episode) + ½ x 20 mg zinc tablet / day x 10 days
6-59 months	2 x 20.5g/11 ORS sachets (min. 125 ml after each episode) + 1 x 20 mg zinc tablet / day x 10 days

Source: World Health Organization.

¹ World Health Organization, [Diarrhoea Disease Fact Sheet N°330](#), WHO, Geneva, April 2013.

² The UN Commission on Life-Saving Commodities, [Oral Rehydration Salts \(ORS\) - Product Profile](#), UN Foundation, New York, 2012.

³ WHO, [Diarrhoea Disease Fact Sheet N°330](#).

⁴ The UN CoLSC, [Oral Rehydration Salts \(ORS\) - Product Profile](#).

⁵ UNICEF, World Health Organization, [Ending Preventable Child Deaths from Pneumonia and Diarrhoea by 2025](#), WHO, Geneva, April 2013, p. 15.

⁶ World Health Organization, [Diarrhoea Treatment Guidelines](#), International Science and Technology Institute, Arlington, January 2005.

⁷ World Health Organization, [Integrated Management of Childhood Illness Manual for the Community Health Worker](#), WHO, Geneva, 2011, p. 65.

ORS and zinc treatment is to be complemented by other interventions, such as rotavirus vaccination and improved safe water, sanitation and hygiene. ORS replaces the essential fluids and salts lost through diarrhoea. Zinc decreases the duration and severity of an episode and reduces the risk of recurrence in the immediate short-term.⁸ Clear recommendations on the use of ORS together with zinc are found in the standard Integrated Management of Childhood Illnesses (IMCI) guidelines for the treatment of diarrhoea.⁹ ORS and zinc are also included in WHO's Essential Medicine List (EML),¹⁰ and Priority Medicines for Mothers and Children,¹¹ as well as national the EMLs and treatment guidelines for childhood diarrhoea treatment in many high-burden countries. ORS and zinc are among the 13 life-saving health commodities identified and targeted for scale-up and access by the UN Commission on Life-Saving Commodities for Women and Children (UN Commission).¹²

Despite a treatment course costing ~\$0.50,¹³ and the products being readily available and affordable on the market, many children (or their caregivers) in developing countries do not have access to these products. Only 38% of children suffering from diarrhoea are treated with ORS; and fewer than 5% with zinc.¹⁴ A number of challenges contributing to the limited availability and up-take of ORS and zinc in many countries are highlighted below (Table 2).

Table 2 Challenges Affecting ORS and Zinc Community Use and Availability

Aspect	Considerations	Recent Actions Taken by UNICEF and Partners
Awareness	<ul style="list-style-type: none"> • Poor general awareness and low access to ORS, including caregivers and health workers. • Poor awareness and low access to zinc. • Many communities poorly understand ORS and do not consider it medicine, as it does not cure. 	<ul style="list-style-type: none"> • Governments encouraged to review and update their policy, legislation and regulation of ORS and zinc, including switching zinc from a prescription only medicine to an over-the-counter medicine. • ORS and zinc included into WHO's priority medicines for mothers and children 2011
Product	<ul style="list-style-type: none"> • The taste of non-flavoured ORS is not appealing to children. • Flavoured ORS unavailable in the public sector. • The ORS quantity produced with a 20.5g/1 litre sachet considered too much and a lot is wasted. 	<ul style="list-style-type: none"> • Flavoured ORS formulations introduced into UNICEF's Supply Catalogue. • UNICEF worked with suppliers to introduce a 10.2g/0.5 litre sachet presentation for ORS treatment.
Access	<ul style="list-style-type: none"> • Suppliers consider ORS/zinc to be of limited monetary value as they are low-priced and low-profit margin products. • Zinc availability is limited in many countries resulting in regular health facility stock-outs. 	<ul style="list-style-type: none"> • Wholesalers and distributors encouraged to include ORS and zinc in their supply chains. • Long-term arrangements made with multiple ORS/zinc certified suppliers.
Utilisation	<ul style="list-style-type: none"> • Inadequate ORS/zinc prescription accuracy. • Low patient ORS/zinc compliance with treatment prescription. 	<ul style="list-style-type: none"> • Co-packed ORS and zinc field-tested to facilitate treatment prescription, administration, compliance and adherence. • ORS/zinc user-friendly co-packaging developed in accordance with WHO treatment guidelines.

Source: UNICEF Supply Division.

⁸ WHO, *Diarrhoea Disease Fact Sheet N°330*.

⁹ World Health Organization, *IMCI Chart Booklet*, WHO, Geneva, March 2014, p. 19.

¹⁰ World Health Organization, *WHO Model List of Essential Medicines*, WHO, Geneva, March 2011.

¹¹ World Health Organization, *Priority Medicines for Mothers and Children 2011*, WHO, Geneva, March 2011.

¹² The UN Commission on Life-Saving Commodities, *Lifesaving Commodities*, UN Foundation, New York, 2014.

¹³ The UN CoLSC, *Oral Rehydration Salts (ORS) - Product Profile*.

¹⁴ The UN CoLSC, *Oral Rehydration Salts (ORS) - Product Profile*.

UNICEF has been working with the UN Commission to support the development, financing, and implementation of plans to scale-up the effective treatment for diarrhoea in high-burden countries. The initiative aims to increase access to diarrhoea treatments through both the public and private sectors. Some of the actions taken by UNICEF are presented above, and includes introducing at scale the innovative co-packaged ORS and zinc through the public sector (Table 2).

3. Products Available Through UNICEF

Until 2012, UNICEF procured non-flavoured ORS in sachets for reconstitution in 1 litre of water as well as zinc in 20 mg dispersible tablets (DT). In 2012, UNICEF expanded the ORS and zinc product offerings to meet the needs of end-users by introducing orange flavoured ORS as well as ORS in sachets for reconstitution in 500 ml of water. The newer products improved taste, encouraged up-take and reduced wastage. Table 3 describes the different products, estimated warehouse stock prices and Stock Keeping Unit (SKU) offered through UNICEF’s Supply Catalogue. Further information on the products available through UNICEF can be accessed [here](#).¹⁵

Table 3 ORS / Zinc Products Procured by UNICEF

UNICEF Catalogue Number	Material	SKU	SKU Guide Price
S1561120	ORS low osm. sachet 20.5g/1l	Carton of 100	\$7.10 box
S1561121	ORS low osm. sachet 20.5g/1l	Carton of 1000	\$70.18 box
S1561140	ORS low osm. sachet 10.2g/0.5l	Carton of 1000	\$54.89 box
S1561130	ORS low osm. orange flavour sachet 20.5g/1l	Carton of 100	\$9.46 box
S1561131	ORS low osm. Orange flavour sachet 20.5g/1l	Carton of 1000	\$94.63 box
S1561132	ORS low osm. flavour 10.2g/0.5l	Carton of 1000	\$76.45 box
S1580020	Zinc 20mg tablets	Carton of 100	\$1.80 box

Source: UNICEF Supply Division product catalogue.

3.1 ORS / Zinc Co-Packaging

Zinc supplementation for childhood diarrhoea was added to WHO’s Essential Medicines List in 2005, encouraging countries to include zinc in their national medicines lists and health budgets. UNICEF has supplied 20 mg zinc DT since 2006. However, despite locally produced zinc products being available, the general lack of knowledge and awareness, including by caregivers and health workers, impacts and limits demand for zinc in many countries. As a result, patients often do not receive the optimum recommended treatment for childhood diarrhoea. To address the limitations to availability, UNICEF worked with its suppliers to develop co-packaged ORS and zinc treatment based on WHO’s guidelines (Table 1), and introduced two ORS and zinc co-packaged products into its Supply Catalogue in 2014 as presented below (Table 4):

Table 4 ORS / Zinc Co-Pack

UNICEF Catalogue Number	Material	Indicative Unit Price
S1580021	Co-packed: 10.2g/0.5l ORS flavoured sachets x 4 + 20mg zinc tablets x 10	\$0.56 co-pack
S1580022	Co-packed: 20.5g/1l ORS flavoured sachets x 2 + 20 mg zinc tablets x 10	\$0.58 co-pack

Source: UNICEF Supply Division.

¹⁵ Under “**Products**” select “**Pharmaceuticals**”, then “**Antidiarrhoeas**”.

Figure 1 Co-Packed ORS and Zinc

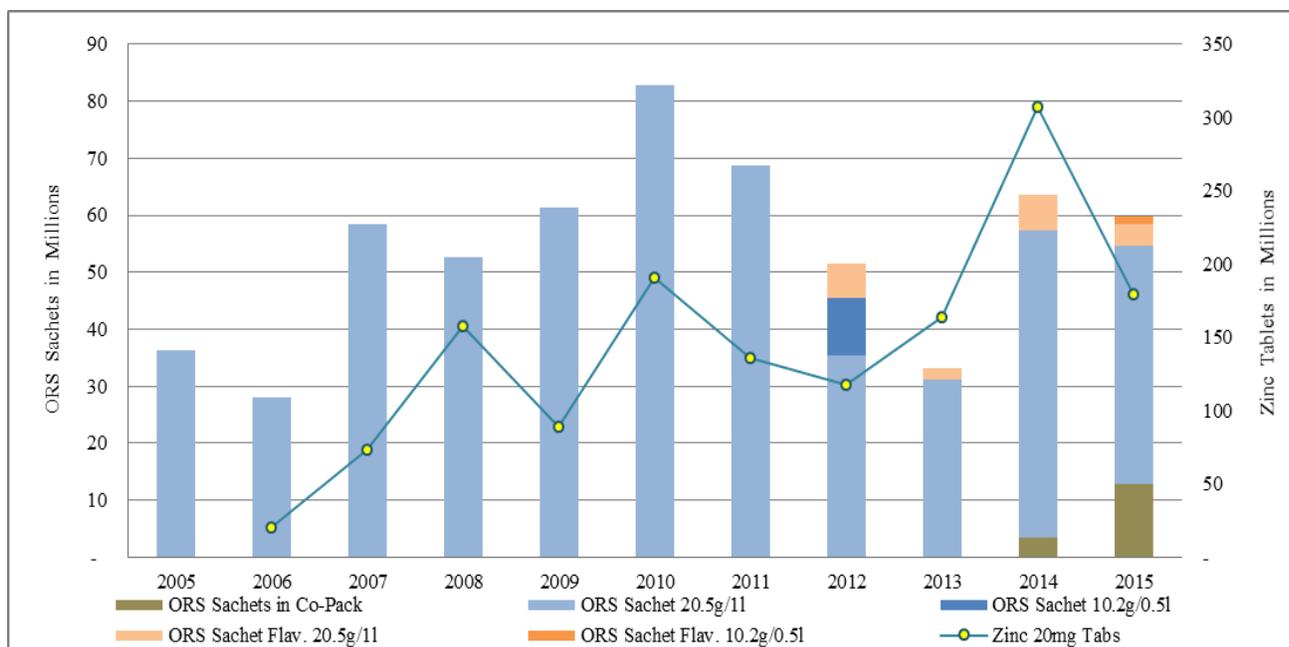


In many countries, ORS is an over-the-counter medicine (OTC) while zinc is a prescription only medicine (POM). In order to ensure that OTC classification was retained for co-packaged ORS and zinc, UNICEF together with the Pneumonia and Diarrhoea Working Group of the UN Commission advocated for zinc reclassification from POM to OTC. Many countries have implemented the switch, enabling co-packaged ORS and zinc to be distributed and marketed as an OTC product. Providing ORS and zinc as co-packaged products will ensure that caregivers dispense, and patients adhere, to current recommended treatment for childhood diarrhoea. Co-packaged ORS and zinc availability through the public sector is a priority and since the introduction of ORS and zinc co-packaged products into UNICEF’s Supply Catalogue in 2014, sixteen countries have introduced this product for public sector distribution.

3.2 Supplier Base

UNICEF procures ORS and zinc mainly for its various child health programmes and for use in emergencies. They are high turnover items, and UNICEF procures approximately 55 million ORS sachets a year, primarily of 20.5g/11, though volumes can range from 30 million to 80 million sachets per year on account of emergency response. UNICEF’s procurement of zinc has steadily increased over the past 10 years to reach 350 million tablets in 2014, from 20 million in 2005. The noted fluctuations in demand and the volume decrease in 2015 is due to ORS and zinc procurements not always being linked together (i.e. quantities for each may be procured in different years), and also reflects sporadic national country procurement requests in response to local programme needs (Figure 1).

Figure 2 ORS and Zinc Supply through UNICEF 2005-2015



Source: UNICEF Supply Division.

UNICEF prepositions a significant proportion of ORS and zinc in UNICEF Supply Division's Copenhagen warehouse for emergency response preparedness to cover the needs of 250,000 people. Whereas UNICEF ships small quantities of ORS and zinc for programme demand from its warehouse in Copenhagen, large quantities are shipped directly from UNICEF suppliers. However, emergency response requirements can generate demand volumes substantially exceeding contingency stock levels, and can be subjected to significant lead-times for delivery from international suppliers. Suppliers located in strategic programme countries can potentially improve local and regional emergency response capacity, supply availability, and timely response. UNICEF ORS and zinc co-pack procurement started in 2014 and has to date reached 7.8 million co-packs. Figure 1 illustrates the co-packed ORS and zinc. Co-packed zinc tablets are included in total zinc procurement volumes.

UNICEF selects suppliers competitively from among UNICEF approved Good Manufacturing Practice (GMP) suppliers via tender. Successful bidders are awarded long-term agreements (LTAs) to supply products usually over a 2-3 year period. In UNICEF's most recent ORS, zinc and ORS / zinc co-packaged tender, UNICEF increased its supplier base for ORS and zinc. The current list of suppliers, products, and the LTAs for each are provided below (Table 5).

Table 5 UNICEF Current ORS / Zinc Product LTA for 2014-2016

Supplier	Duration	Start	End	Product description
ORS				
CHI (Nigeria)	1 year	15/09/2015	28/06/2016	ORS low osm. flavour 20.5g/1l/CAR-10 x 100
FDC (India)	1 year (+ 1 year)	30/06/2014	29/06/2016	ORS low osm. 20.5g/1l/CAR-10 x 100
	1 year (+ 1 year)	30/06/2014	28/06/2016	ORS low osm. 20.5g/1l/CAR-100
	1 year (+ 1 year)	30/06/2014	29/06/2016	ORS low osm. flavour 20.5g/1l/CAR-10 x 100
	1 year (+ 1 year)	30/06/2014	29/06/2016	ORS low osm. flavour 20.5g/1l/CAR-100
KBI (Germany)	1 year (+ 1 year)	30/06/2014	28/06/2016	ORS low osm. 20.5g/1l/CAR-10 x 100
	1 year (+ 1 year)	30/06/2014	28/06/2016	ORS low osm. 20.5g/1l/CAR-100
	1 year (+ 1 year)	30/06/2014	28/06/2016	ORS low osm. flavour 20.5g/1l/CAR-10 x 100
	1 year (+ 1 year)	30/06/2014	28/06/2016	ORS low osm. flavour 20.5g/1l/CAR-100
Renata (Bangladesh)	1 year (+ 1 year)	30/06/2014	28/06/2016	ORS low osm. 10.2g/0.5l/CAR-10 x 100
	1 year (+ 1 year)	30/06/2014	28/06/2016	ORS low osm. 20.5g/1l/CAR-10 x 100
	1 year (+ 1 year)	30/06/2014	28/06/2016	ORS low osm. 20.5g/1l/CAR-100
	1 year (+ 1 year)	30/06/2014	28/06/2016	ORS low osm. flavour 10.2g/0.5l/CAR -10 x 100
Universal Corporation Ltd (Kenya)	1 year (+ 1 year)	30/06/2014	28/06/2016	ORS low osm. 10.2g/0.5l/CAR-10 x 100
	1 year (+ 1 year)	30/06/2014	28/06/2016	ORS low osm. 20.5g/1l/CAR-10 x 100
	1 year (+ 1 year)	30/06/2014	28/06/2016	ORS low osm. 20.5g/1l/CAR-100
	1 year (+ 1 year)	30/06/2014	28/06/2016	ORS low osm. flavour 10.2g/0.5l/CAR -10 x 100
	1 year (+ 1 year)	30/06/2014	28/06/2016	ORS low osm. flavour 20.5g/1l/CAR-10 x 100
	1 year (+ 1 year)	30/06/2014	28/06/2016	ORS low osm. flavour 20.5g/1l/CAR-100
Zinc				
Alkem Laboratories (India)	1 year (+ 1 year)	15/10/2014	14/10/2016	Zinc 20mg tablets/PAC-100
CHI (Nigeria)	1 year	15/09/2015	14/10/2016	Zinc 20mg tablets/PAC-100
FDC (India)	1 year (+ 1 year)	15/10/2014	14/10/2016	Zinc 20mg tablets/PAC-100
Macleods Pharmaceuticals (India)	1 year (+ 1 year)	15/10/2014	14/10/2016	Zinc 20mg tablets/PAC-100
Nutriset (France)	1 year (+ 1 year)	15/10/2014	14/10/2016	Zinc 20mg tablets/PAC-100
Square Pharmaceuticals (Bangladesh)	1 year (+ 1 year)	15/10/2014	14/10/2016	Zinc 20mg tablets/PAC-100
Universal Corporation Ltd (Kenya)	1 year (+ 1 year)	15/10/2014	14/10/2016	Zinc 20mg tablets/PAC-100
ORS / Zinc Co-Pack				
CHI (Nigeria)	1 year (+ 1 year)	31/08/2015	31/05/2016	ORS fl.20.5g/1l x 2 + zinc 20mg 10 tabs/Co-Pack
FDC (India)	1 year (+ 1 year)	11/04/2014	10/04/2015	ORS fl.20.5g/1l x 2 + zinc 20mg 10 tabs/Co-Pack
Renata (Bangladesh)	1 year (+ 1 year)	11/04/2014	09/04/2016	ORS fl.10.2g/0.5l x 4 + zinc 20mg 10 tabs/Co-Pack
Universal Corporation Ltd (Kenya)	1 year (+ 1 year)	20/05/2014	18/05/2016	ORS fl.10.2g/0.5l x 4 + zinc 20mg 10 tabs/Co-Pack
	1 year (+ 1 year)	20/05/2014	18/05/2016	ORS fl.20.5g/1l x 2 + zinc 20mg 10 tabs/Co-Pack

Source: UNICEF Supply Division.

4. Steps Forward

- UNICEF will continue actively seeking and encouraging potential suppliers in programmatically strategic countries.
- UNICEF anticipates issuing a tender for ORS, zinc and co-packed ORS and zinc during 2016 to ensure continued availability.

For further questions or additional information, please contact:

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Other UNICEF information notes can be found at http://www.unicef.org/supply/index_54214.html.