Vitamin A Supplementation
Supply Update

UNICEF Supply Division

February 2017
1. General Brief and Background

Vitamin A deficiency (VAD) is a form of undernutrition that increases the risk of disease and mortality from severe infections, including diarrhoeal disease and measles.\(^1\) VAD is also the leading cause of child blindness, and can cause night blindness in pregnant women, especially during the last trimester when demand by the unborn child is at its highest, and it may increase the risk of maternal mortality. VAD is a concern in many countries, notably in Africa and South-East Asia, where a third of young children and pregnant women in low-income countries experience VAD.\(^2\)

In order to eliminate VAD and its consequences, the World Health Organization (WHO) recommends breastfeeding, as breast milk is a natural source of vitamin A, as well as vitamin A supplementation, combined with vitamin A-rich diets and food fortification.\(^3\) For those already affected by VAD, two doses a year of high-dose vitamin A supplementation is critical and can significantly reduce mortality and morbidly.\(^4\) WHO includes vitamin A on its List of Essential Medicines (EML).\(^5\) The EML comprises a list of essential medicines that should be available in all functioning health systems.

UNICEF procures vitamin A mostly as retinol, which is the animal form of vitamin A used as a dietary supplement and presented in an Oral Liquid Preparation (OLP). An OLP is a solution containing the active ingredients and can come in capsules. UNICEF procures retinol in two presentations, which are the subject of this Supply Update:

- Retinol 100,000IU soft gelatine capsules /PAC-500 (S1583015).
- Retinol 200,000IU soft gelatine capsules /PAC-500 (S1583000).

2. Current UNICEF supply Situation

UNICEF procurement for programme country deliveries only represents a relatively small volume of total vitamin A procurement. The Micronutrient Initiative (MI), a global health partnership, addresses micronutrient deficiency in 82 priority developing countries through technical expertise and programme support.\(^6\) It procures more than 75% of the global vitamin A requirements for programme countries (approximately 400 to 450 million capsules a year).\(^7\) UNICEF directly procures for emergencies, countries that have graduated from MI support, and UNICEF programmes.

Since 2007, UNICEF has procured on average approximately 68.5 million vitamin A capsules a year (137,000 bottles) mostly for UNICEF’s Copenhagen warehouse (Figure 1). Annual volume fluctuations represent the quantities procured and delivered to replenish UNICEF’s warehouse. As this is a product used in emergencies and included on UNICEF Emergency Supply List for emergency pre-positioning, UNICEF bases its procurement on a number of considerations including stock level analysis, buffer

\(^3\) WHO, *Micronutrient Deficiency, Vitamin A Deficiency*.
\(^4\) In cases of measles, the periodic supply of vitamin A has proven to reduce mortality by up to 23% overall, and by up to 50% for acute cases of measles.
\(^7\) In addition to the two presentations procured by UNICEF, MI procures and delivers through UNICEF retinol 100,000IU soft gelatine capsules in packs of 100 capsules.
requirements, as well as purchase orders and stocks reserved for packing sets. The lead-times for vitamin A deliveries against UNICEF warehouse purchase orders can take several months.

**Figure 1 UNICEF Vitamin A Procurement through 2007-2016**

![Figure 1 UNICEF Vitamin A Procurement through 2007-2016](chart1)

Source: UNICEF Supply Division

Figure 2 presents the weighted average price (WAP) for both presentations from UNICEF’s Copenhagen warehouse, and excludes the costs of transport and delivery. The trend in WAP reflects the impact of API (Active Pharmaceutical Ingredients) prices on the world market and the limited supplier base for this product, which is specifically used to counter VAD, and which is very unstable and difficult to produce.

**Figure 2 UNICEF Vitamin A WAP in US$ from Copenhagen warehouse 2007-2016**

![Figure 2 UNICEF Vitamin A WAP in US$ from Copenhagen warehouse 2007-2016](chart2)

Source: UNICEF Supply Division
By comparison, Figure 3 shows more stable volumes, and describes UNICEF deliveries to programme countries, mostly from UNICEF’s warehouse stocks. In 2016, UNICEF supplied vitamin A to approximately 40 countries, of which 27% was for use in emergency response to measles outbreaks.

**Figure 3 UNICEF Vitamin A Country Deliveries through 2007-2016**

3. **Issues and Challenges**

Retinol soft gelatine capsules, in the form of OLP, are a niche product and not produced by many manufacturers. The procurement volumes of UNICEF are also relatively modest, representing approximately 70 million capsules per year.

Following the last tender in 2013, UNICEF was only able to establish one vitamin A long-term arrangement (LTA), with NutriCorp International, having complied with technical, quality assurance, and financial approvals. In June 2016, NutriCorp International stopped supplying UNICEF the volumes required for UNICEF’s warehouse replenishments, owing to changes in supplier product specifications. The procurement interruption has had an impact on warehouse stock availability through UNICEF. During 2016, UNICEF only procured 22 million capsules / 44,000 bottles, accounting for only a third of the anticipated volume.

UNICEF is not able to fulfil all current open requisitions and may not be able to respond to regular programme requests in the short-term (i.e. 3-4 months). As such, UNICEF will only consider vitamin A requests for emergency response and within the limits of stock availability. The current supply shortages will not affect the supply of in-kind vitamin A donations from MI through UNICEF’s Copenhagen warehouse.

4. **Steps Forward**

- UNICEF and MI will continue to collaborate to expand the supplier base and work with potential suppliers to expand their capacity and re-establish regular replenishment of warehouse stocks.
- UNICEF will seek to establish supply arrangements with at least one main supplier and one backup supplier both of which must meet product quality requirements.
- UNICEF will issue a tender in February 2017 to establish LTAs for the procurement of vitamin A, and seek to secure reliable suppliers capable of meeting strict quality requirements at competitive prices and as emergency requests.
- UNICEF anticipates securing urgent warehouse orders by 2Q 2017 and secure regular country supply by 3Q covering a 24-36 months period.

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