



VITAMIN A SUPPLEMENTATION PROGRAM

Supporting the supply chain for the provision of Vitamin A supplementation services

1. What is VAS?

The World Health organization (WHO) recommends that all children aged 6 to 59 months be supplemented every six months with high dose of vitamin A (100,000 IU for 6 to 12 months old and 200,000 IU for 12 to 59 months old children). The recommendations are associated with the evidence that when twice yearly vitamin A supplementation (SVA) covers at least 80% of the children aged 6 to 59 months, it contributes to reducing the under-five mortality rates by up to 24%.

VAS is delivered, in most countries, through twice yearly national campaigns. These events combine polio immunization, routine immunizations (such as measles) as per the country's immunization calendar, vitamin A supplementation and deworming. In some countries, additional services such as detection of wasting or family planning are also integrated in the package delivered. The campaigns are organized as door-to-door events where health workers visit each household or as fixed strategies where caregivers are invited to bring their children to the nearest health facility (or outreach site when combined with fixed facility delivery) to receive the services.

Alternative to the event based delivery of VAS is their integration into routine services: a six month contact point is commonly integrated within countries vaccination calendars at exactly 6 months of age. In addition, when increased coverage of facility based routine immunization and eradication of polio render campaigns unnecessary, VAS is integrated as a routine service provided in health facilities.

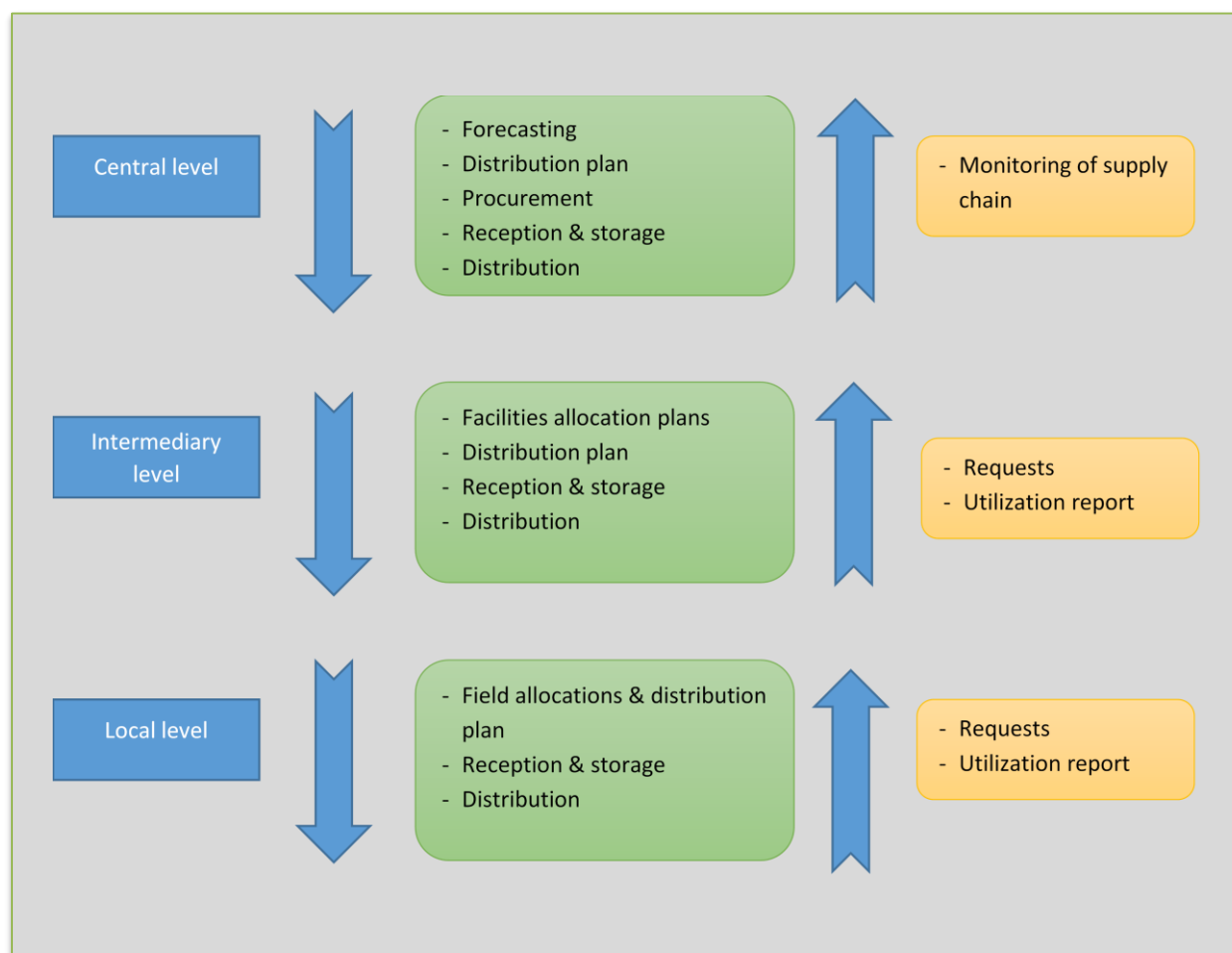
2. What is a supply chain?

A supply chain is defined as the sequence of processes involved in the production and distribution of a commodity. In this case, the commodity is the vitamin A capsules, but other commodities such as deworming tablets are often considered with the VAC, and distribution supplies as well (see section 4.)

The key elements of a supply chain are numerous, starting from the forecasting exercise end ending with the field level distribution of the capsules to their targeted recipients.

In this guide, processes are not the only aspects considered: the persons in charge of specific activities at any level in the chain and the documents and tools required are also considered. Means, individuals and processes combined together are called functions: the forecasting function, for instance, encompasses the persons in charge of organizing and conducting the forecasting exercise, the documents and tools that will be used, and the processes by which the forecasting calculations are done. Figure 1 below illustrates the main functions that are supposed to be operational for the supply chain to be functional.

Figure 1. Supply chain functions



Numerous technical guides exist on how to manage a supply chain. Two examples are:

- The Logistics Handbook: A Practical Guide for the Supply Chain Management of Health Commodities¹
- Managing the supply chain of specialized nutritious foods²

3. Objectives of this guide

¹ USAID/ DELIVER PROJECT, 2011, The Logistics Handbook: A Practical Guide for the Supply Chain Management of Health Commodities. Arlington, Va. Available from: <http://apps.who.int/medicinedocs/en/d/Js20211en/>

² WFP, 2013, Managing the supply chain of specialized nutritious foods, available from: <http://www.cmamforum.org/Pool/Resources/Managing-the-supply-chain-of-specialized-nutritious-foods-WFP-2013.pdf>

Inefficiencies in countries' medical supply chain increase the risks of stock-outs of essential drugs and are therefore often identified as a bottleneck to high coverage of medical services. Whether it is delivered through twice-yearly events or as a routine service, one of the conditions to reach 80% of the target children is to ensure availability of the vitamin A capsules.

This guide aims at providing guidance to health practitioners and health system actors for identifying and addressing gaps and bottlenecks within the health system supply chain. Although it focuses on VAS, it could be applied to other medical commodities.

4. Principles

4.1. Supplies necessary for VAS and deworming:

Medical Supplies

- 100,000 IU vitamin A capsules (blue) for 6-11 months old children
- 200,000 IU vitamin A capsules (red) for 12-59 months old children
- Deworming tablets, Mebendazole (500mg) or Albendazole (200/400 mg) for children 12-59 months.

Non-medical supplies

- Scissors or clean nail clippers to cut capsules
- Clean safe water and spoons to crush and mix tablets
- Deworming tablets for young children who are unable to safely chew deworming tablets.
- Waste basket or box for disposing of empty capsules and other waste.
- Job aids and IEC materials.
- Tally sheets for both VAS and deworming.
- reporting tools

4.2. Who should use this guide?

- Program Managers
- Managers of supply chain functions
- Officers responsible for implementing VAS Programs

4.3. When to use this guide:

- When supply challenges exist, often revealed by existence of stock outs at field level
- When introducing routine VAS to ensure continuous availability of supply in the field
- To evaluate the performance of supply chain strengthening interventions (on annual basis)

4.4. Health system strengthening approach

It is essential to adopt a health system approach to the supply chain. Vitamin A capsules cannot be considered alone, but as one commodity among the many others that are dealt within the supply chain. In order to improve management of VAC, it is necessary to consider the supply chain itself and address issues that affect all supplies.

5. Process

5.1. How to identify and address VAC supply issues

Supply issues are complex and result from a wide range of causes. It is therefore important to assess these issues carefully in terms of how the supply chain works, so as to identify barriers and bottlenecks that will have to be addressed.

For each function proposed in figure 1,

- Identify the actors involved and their understanding and knowledge of the supply management and existing bottlenecks.
- Identify the processes involved in the supply management and assess their functioning (means identifying and understanding the procedures and tools required and how they are used at each level)
- Identify opportunities and leverage points to improve the supply chain.

If the initial assessment is properly conducted, corrective measures are easier to identify.

5.2. Methods of data collection

Analysis of supply chain requires a combination of methods and is better organized from down to top or from the field to the central level. This approach allows the evaluator to focus on the key issues identified at field level and to trace the gaps and bottlenecks that lead to this issue. For instance, if stock-outs are identified at facility level, the evaluator should focus on the function at facility level first and answer some of the key questions it is associated with: are requests sent on time and complete to upper level, is stock management in the facility efficient, is the use of the supplies respectful of protocols? Is supplies consumption reported upward? It is likely that some gaps will be identified but also that some functions have been operational but did not receive the result expected: for instance, requests sent should be answered by the sending of supplies. So the process can move up the health system levels and identify, at each level, what are the main gaps and issues, but also what are the best practices and opportunities. For a comprehensive evaluation of the assessment of the supply chain, a top – down approach can also be considered.

Methods of data collection should be both quantitative and qualitative.

At field level, the best approach to identify stock-out issues consist in calculating the percentage of facilities that have been out of stock in the 1 month before the assessment. The percentage calculated will provide an idea of the scale of the problem to be addressed. In a health system strengthening perspective, however, it is essential to also understand properly the dynamics between actors, between levels of the system, as well as the perceptions and the understanding of the actors. This can only be achieved through a qualitative assessment using a semi-structured interview: sometimes asking the actors what they think the problem is can be more efficient than to try reviewing each detail of the supply chain. Because the health system is managed by individuals, the reasons mentioned by actors may not be demonstrated by quantitative data but still represent a major issue to address.

Table 1. Supply chain assessment

Level	Function	Key points	Associated assessment
National	Coordination	<ul style="list-style-type: none"> • The management of the supply chain involves close coordination between a number of parties and players: supply management agency within the government, central store management team, EPI and nutrition sections of the ministry of health, external actors involved, etc. • Coordination on supplies should take place to support the forecasting and procurement process and therefore be organized at least once a year. • It should then be organized in an ad hoc basis to solve issues. 	<ul style="list-style-type: none"> • List who is involved in the process and what are each agency and person roles and responsibilities? • Indicate if formal agreements exists on frequency and modalities of coordination • Also indicate the dates and attendees of last coordination event and agenda and minutes.
	Forecasting	<ul style="list-style-type: none"> • A forecast exercise should be based on target populations as per the official Government population figures or projected from census data. • Forecasting should be conducted in coordination with all relevant actors and through a consultative process. • It is important that the supplies are majored with a buffer percentage (+5% added for losses/waste) • Forecasting is prepared early enough to factor in the timing of procurement and distribution. • Forecasting should be done once or twice a year and use lessons from the past years: for example was there enough supplies last year, did they reach the country in time? (The distribution model should be taken into account) 	<ul style="list-style-type: none"> • When is the forecasting exercise done? • How often is the forecasting done? • Who is involved in the forecasting exercise? • What population data is used in forecasting? • Are the supplies majored with a buffer percentage? • Is the forecasting exercise integrated with other supplies? • What is the purpose of forecasting (routine, campaign, both?) • What are the results of the previous forecasting exercise (provide quantities forecasted – they will have to be compared with quantities ordered and quantities distributed: one objective of the assessment will consist in tracing the whole process of the previous exercise: show VAC on a continuum from forecast to field distribution and indicate quantities and dates for each step, in order to identify issues and gaps).

	Procurement	<ul style="list-style-type: none"> • Usually procurement is done after forecasting but it should well in advance to allow supplies to be in the country in the time required. • Procurement should be done at least once or twice a year depending on the country's context. • Ideally, procurement should be organized with other medical supplies but in the case of VAC, external actors may be leading the process (MI and UNICEF). The level of integration and sustainability of the procurement mechanisms depends on involvement of national governments and use of public funds. • Previous experiences are important to consider in evaluating the performance of the procurement processes. 	<ul style="list-style-type: none"> • Who pays for Vitamin A supply, is it the Government, donors or both? What is the proportion supported by each and for what aspects (purchase of capsules, storage, transport) • Who conducts the procurement process? • Are the supplies procured from a reliable source? • How long does the procurement process take? (factor in time required for receiving the supplies) • How often does procurement take place? • What is the status of VAC is it included in essential medicine list or requires custom? • Is VAC procured together with other medical supplies? • From the previous procurement processes, how long did it take to receive supplies? Was there any issue? Were the supplies in country as needed? (continuum as proposed in previous section)
--	-------------	--	--

	Distribution plan	<ul style="list-style-type: none"> • A distribution plan is critical for the supply chain to function: VAC cannot be distributed alone. The two most common ways it can get distributed is through existing channels used for EPI or through national medical store department with other medical supplies. • There may not exist a clear distribution plan but there should be an agreement or documentation indicating how VAC are going to be distributed. • Sometimes the distribution system is a parallel one that takes place just before campaigns and may shortcut the usual system. Although this may be the only available option, it is not a sustainable or a cost effective approach and should be questioned. • Whatever the distribution system used, it is essential to understand it. EPI often uses a “push approach” (distributing without getting requests based on forecasted needs and at a pre-determined frequency) while for other medicines the approach is more commonly a “pull approach” based on requests from facilities through the intermediary level where all facilities requests are compiled and managed locally if an intermediary medical store exists or sent to the central level for processing. 	<ul style="list-style-type: none"> • Is VAC integrated in one distribution plan? If no plan is made for VAC, identify the strengths and weaknesses of the various plans that exist to identify one that could be suitable for VAS. • In the case of an ad hoc supply chain system for VAC, identify opportunities for integration and determine the most appropriate system to integrate with. • Analyze the distribution plan looking at when supplies are distributed, triggered by what (request or automatic), who manages the distribution/allocation system, what are the delays between requests and distributions. • Existence of stock outs at any level should be used to assess the efficiency of the plan. Stock outs may be due to issues in the design of the plan or its implementation. • The level where stock outs exist should help informing where the issues are taking place.
	Receipt of supplies and storage at central level	<ul style="list-style-type: none"> • The system for receiving supplies include management of custom in harbor or at any point of entry, transport to warehouse, management of associated costs and storage at central level. • Respecting minimum standards for stock management is expected with use of adequate tools (stock cards, inventory) 	<ul style="list-style-type: none"> • Who (what agency?) is in charge of clearing and receiving the supplies? • What is the reception process? Associated Costs? Who pays for it? • Where are the supplies being stored? Who is in charge of storage? • Are there recurrent or known issues with the reception and storage process? • Find out about inventory management, how is it done and who is responsible.

	Distribution to Intermediary level	<ul style="list-style-type: none"> • Distribution to intermediary actors usually represents the distribution to zone/province/region/district authorities that will store the supplies before dispatching them to each health facility they support. • The distribution plan is supposed to mention the processes that take place for this stage of distribution. • At this level of distribution downward, communication is very critical and often constitutes a barrier to best practices: communication from down to top allow requesting of supplies, from top to down allow provision of feedback and information about supplies to be received. • The timeliness of the distribution, the respect of quantities requested or forecasted, the use of adequate tools and documentation are some of the key aspects that compose an effective distribution system. 	<ul style="list-style-type: none"> • Compare the reality of practices from the plans that exist. Otherwise, questions to be answered are the same as for the distribution plans: who, what, when, how, what frequency, etc. • As for every other step, it is important to look at both the theoretical frame and the practice as highlighted by the previous year's distributions. • If requests are to be sent from intermediary level to the central level, check timeliness of requests and compare with the ones from field and the stocks existing at the intermediary warehouse. Then check the timeliness of the response from central level on the requests received. The existence and quality of requests are also important indicators. • It is important to know who pays for the distribution and if funds are released in a timely manner. • As for the previous steps, check whether the distribution system is an ad hoc one or respects clear rules and plans.
Intermediary levels	General	<ul style="list-style-type: none"> • At intermediary level, the supply management is likely to be integrated with the health authorities. • A series of procedures and tools should be available and proposed by the central level and standardized. 	<ul style="list-style-type: none"> • Who is involved in the process and who takes the lead • Is there a dedicated officer in charge of all supplies management? • Is the supply system and the warehouse under the health authorities or is it an independent entity? If yes, what are the processes and procedures for cooperation between the two?

	Receipt and storage at Intermediary level	<ul style="list-style-type: none"> Warehouse management is an important factor for a smooth supply chain: reception, storage and distribution depend on the use of systematic steps and documentation. 	<ul style="list-style-type: none"> Who receives supply, what documents are used, what is the system in place within health authorities, timing and communication systems for receiving and then distributing the supplies? Are there recurrent issues that have been identified? (How did the last rounds happen? Some supplies face more issues than the others?) Find out about inventory management, how is it done and who is responsible. Is VAC supply integrated with other supplies for management at intermediary level?
	Distribution to field level	<ul style="list-style-type: none"> Distribution procedures may differ from national to intermediary level in comparison with intermediary level to facilities. In addition different types of facilities may have different systems, as for hospitals the distribution may be following a specific path from the smaller primary care centers. As for all levels, it is important to understand the system, the rules, but also to look at past distribution events to identify barriers and issues that would require some support. Requests from facilities should be sent in a timely manner to avoid stock outs, taking into consideration the expected delays for distribution. 	<ul style="list-style-type: none"> Describe the distribution system: documents, requests, timeliness, frequency, transport Who is in charge? What are the recent experiences in relation to the distribution system? Find out who pays for distribution costs is it the Government or donors? Find out if the distribution arrangement for routine VAS is permanent or temporary. Are requests sent on time? Does the distribution follow request in a reasonable amount of time? Are the quantities requested delivered as per the request? Is there a two way distribution system, meaning that facilities are supposed to send back VAC supplies after campaign?

Field level	General	<ul style="list-style-type: none"> It is important to ensure that the distribution to service delivery points is done in accordance with population size and density data as well as geographic proximity. This includes providing appropriate capsules for both 100,000 IU and 200,000 IU at each facility. 	<ul style="list-style-type: none"> Know who is involved in the process and if the procedures are followed.
	Storage	<ul style="list-style-type: none"> Facility based storage is supposed to respect the same rules as for any warehouse throughout the chain from national to field level: inventory documents and procedures, stock cards, recording of the use of drugs are supposed to take place at facilities level even if it's only a small pharmacy is available. One person is supposed to be responsible for the management of the pharmacy. 	<ul style="list-style-type: none"> Who is responsible for storage, what documents are available? What is the frequency of inventories, reporting on inventories to facility and higher level Who sends the requests, when, how often? Are they done adequately?
	Distribution to beneficiaries	<ul style="list-style-type: none"> Distribution to beneficiaries can take various forms: through the Epi system for 6 month contact point, through the routine visits for children 6 to 59 months or through outreach services. In all cases, distribution should be recorded for each individual and reported to the pharmacy/warehouse. In the case of distribution for campaigns, the same principles should be applied: forecasting needs, appointing focal person, ensuring recording in proper documents. In some cases, post distribution left over stocks is to be returned to the intermediary level. Strengths and weaknesses should be identified and corrected in the distribution systems. They are likely to be revealed by the existence of stock outs. 	<ul style="list-style-type: none"> Identify processes and documents used for each type of distribution mechanism. Identify the focal persons responsible for distribution for each distribution mechanism. Check experiences from previous rounds: shortages? Stock available for routine is as expected? Is it real? Documentation? Find out whether Vitamin A capsules that remain from campaigns are used for routine VAS delivery and how that works. Find out how Vitamin A supplies from campaigns are managed, whether they are collected from health facilities and sent back to district level or remain at health facilities. Is the quantity of supplies remaining from campaigns recorded?