

Enhancing vaccine supply planning with efficient tracking of vaccine shipments, distribution, and utilization in Sierra Leone - lessons from the vaccine collaborative supply planning initiative



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BACKGROUND

The COVID-19 pandemic underscored the importance of managing vaccine supply chains effectively. The Vaccine Collaborative Supply Planning (VCSP) initiative supports countries to improve the availability of data for evidence-based decision making on supply planning. The VCSP also aggregates data at the global level to improve the ability to influence global decision makers while respecting the country privacy. The VCSP initiative is led by JSI, and implemented in 16 countries in collaboration with MOH and partners including CHAI, PATH, UNICEF, and VillageReach.

CHAI led implementation of the VCSP initiative in Sierra Leone from December 2022 to April 2023. Prior to the implementation, there was no process or tool in-country for forecasting COVID-19 vaccines needs. With no visibility into utilization trends and expected demand, the country was unable to make informed decisions on shipment acceptance or timing, leading to expiry of some of the COVID-19 vaccines donated which had short shelf lives. For example, the AstraZeneca vaccine, a batch of 100,800 doses of was received in country on the 17th of October 2021 and due to expire on the 30th of November 2021, and about 6,000 doses of it got expired. Another batch of 42,000 was received on the 22nd of March 2021 and 13,000 of it expired on the 13th of April 2021, and other 650,400 doses was also received on the 18th February 2022 that expired on 30th April 2022 with 41,500 doses.

RESULTS



Improved data visibility thereby enabling evidence-based supply planning for COVID-19 vaccines

- Shipment data and consumption trends, including actual utilization and wastage, are now visible for Sierra Leone and can be easily interpreted to inform forecasting and supply planning decisions for COVID-19 vaccines



Capacity building for EPI personnel

- CHAI trained 9 EPI personnel and coached two of them to achieve competence with the day-to-day use of the VCSP tool, including interpretation of the information on the tool's dashboard to support decision making



Revelation of data management opportunities and development of an improvement plan

- Following the supply planning maturity assessment, the EPI team developed an improvement plan with a clear timeline and assignment of responsibilities. The plan focuses on three high priority areas for improvement - data, supply planning meetings and adjustment of supply plans.
- In addition, the team can now better contextualize the current vaccine forecasting gaps that could be avoided using insights from the VCSP tool

METHODS

CHAI conducted the following activities as part of the VCSP implementation in Sierra Leone:

- Conducted an inception meeting with the EPI Program Manager and the Supply Chain Lead to secure commitment
- Facilitated a training session for nine EPI staff. This covered refresher trainings on quantification and forecasting, supply planning and an in-depth review of the VCSP tool. The trainees included two members of the EPI M&E team and aimed to ensure full ownership of the VCSP implementation from the project inception.
- Supported the EPI-assigned focal person with utilization of the VCSP tool. The focal person led the entry of shipment and consumption data, data triangulation and interpretation of the analyses from the VCSP tool
- Facilitated the supply planning maturity assessment to determine if the country is in the ad hoc, reactive or proactive stage based on five categories of factors i.e., commitment and political will, data, analysis, supply planning meetings, and adjustment of supply plans. The assessment revealed that Sierra Leone is in the reactive phase of supply planning.

Quantity (doses)	Quantity (vials or syringes)	Sector	Status	Expected arrival date	Actual arrival date	Supplier	PO number	Shipment reference	Syringes included?	Primary vaccine storage temperature (°C)	Secondary vaccine storage temperature (°C)	Tertiary vaccine storage temperature (°C)	Length of time from shipment expiry (month)
50,000	50,000	Public	Received		26-Feb-2021	COVAX				2° C to 8° C	3,090	3,916	
150,000	150,000	Public	Received		26-Feb-2021	COVAX				2° C to 8° C	9,270	11,747	
96,000	96,000	Public	Received		8-Mar-2021	COVAX				2° C to 8° C	36	514	
42,000	42,000	Public	Received		22-Mar-2021	COVAX				2° C to 8° C	16	225	
40,000	40,000	Public	Received		26-Mar-2021	COVAX				2° C to 8° C	2,472	3,133	
150,000	150,000	Public	Received		8-Aug-2021	COVAX				2° C to 8° C	9,270	11,747	
50,000	50,000	Public	Received		8-Aug-2021	COVAX				2° C to 8° C	3,090	3,916	
96,000	96,000	Public	Received		8-Aug-2021	COVAX				2° C to 8° C	36	514	
52,800	52,800	Public	Received		1-Sep-2021	COVAX				2° C to 8° C	40	281	
151,200	151,200	Public	Received		7-Sep-2021	COVAX				2° C to 8° C	116	804	

Figure 1: Sierra Leone VCSP tool with shipment data from February 2021 to January 2023

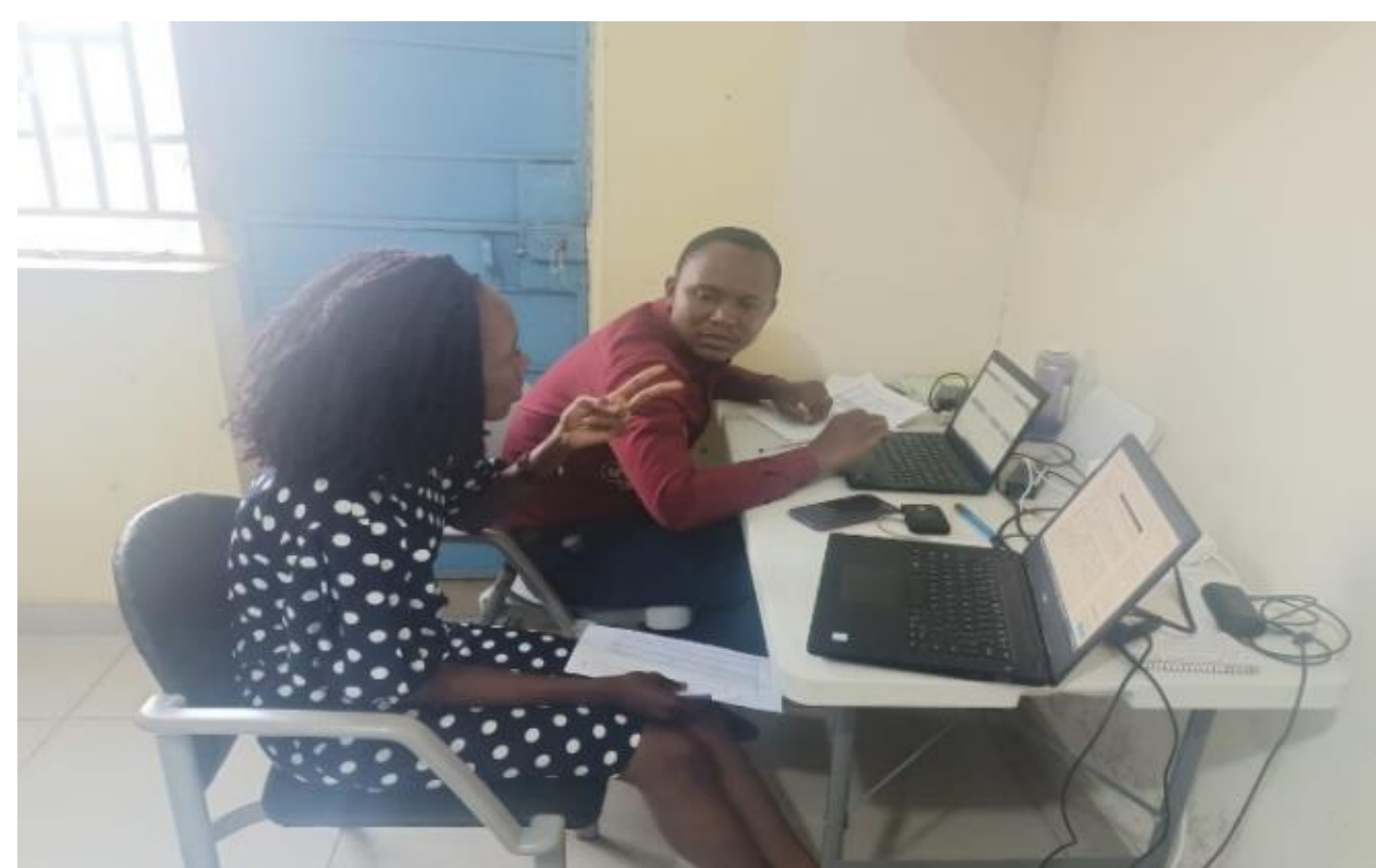


Figure 2: EPI focal person with CHAI staff during shipment data entry and triangulation

CONCLUSION

Introduction of the VCSP initiative for COVID-19 vaccines in Sierra Leone is in alignment with EPI's plan to commence bottom-up approach to quantification and forecasting for vaccines. This will involve estimation of needs starting from the chiefdom level to the District Health Management Team (DHMT) and then at national level.

Engagement with the EPI leadership, acceptance and response shows a program that is interested and committed to solving its supply chain issues and bottlenecks by improving visibility into stock pipeline and vaccine wastage rate across all levels. Furthermore, it was evident that EPI was not interested in the introduction of the new tool but also in process strengthening and capacity development for its staff.

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