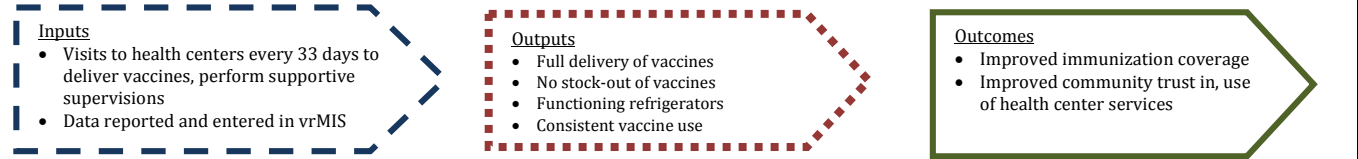




Performance Report of the Dedicated Logistics System for Vaccines in Mozambique

Provinces: Cabo Delgado, Niassa, Gaza, Maputo
 Period: January to December, 2014
 Scale: 429/461 Vaccination Posts

This Performance Report provides a summary of the routine metrics for performance of the Dedicated Logistics System (DLS) for vaccines. These measures focus on the inputs and outputs identified in the DLS logic model below. Outcome metrics are measured through point-in-time surveys every three years and are not present in the charts below.



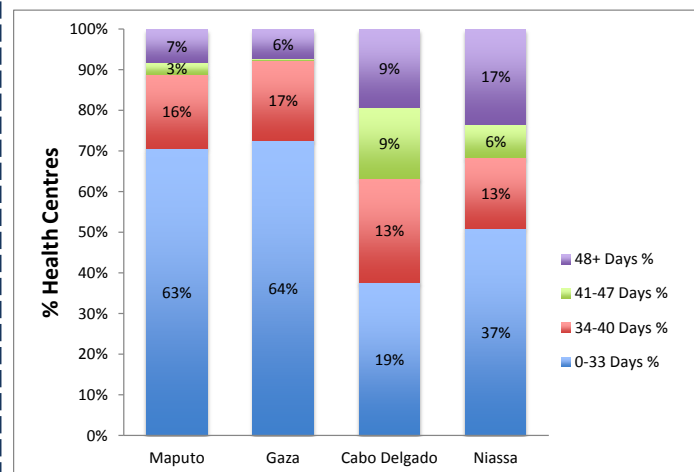
Electronic Vaccine Logistics System (SELV): SELV was developed to facilitate improved data collection, visualization and analysis for the vaccine supply chain. The SELV monthly reports are reviewed by the staff at the district, provincial and national levels to monitor distribution system performance.

In the four provinces where the DLS is operating, VillageReach supports 429 vaccination posts in 53 Districts, reaching a population of more than five million people. During the last month of 2014, 95% of the vaccination posts were visited, an improvement from the beginning of the year, as seen below.

| Province | # of Districts | # of Health Units | # of Vaccine Posts | # of Vaccine Posts in DLS | Total Population Reached* | # Health Units Reporting | |
|--------------|----------------|-------------------|--------------------|---------------------------|---------------------------|--------------------------|------------|
| | | | | | | Jan 2014** | Dec 2014** |
| Niassa | 16 | 171 | 136 | 136 | 1,434,718 | 78% | 95% |
| Cabo Delgado | 17 | 117 | 114 | 109 | 1,879,255 | 91% | 95% |
| Gaza | 12 | 131 | 127 | 100 | 1,161,113 | 79% | 93% |
| Maputo | 8 | 84 | 84 | 84 | 1,477,788 | 89% | 96% |
| TOTAL | 53 | 503 | 461 | 429 | 5,952,874 | 84% | 95% |

Source: MISAU DPS PAV; *based on MISAU DPS PAV 2014; **VillageReach SELV Dec 2014

Inputs: Average Delivery Intervals for the Health Centers Visited, by Province.



In disaggregating the delivery interval by province, it is quite clear that the Provinces of Gaza and Maputo are the best provinces in terms of performance.

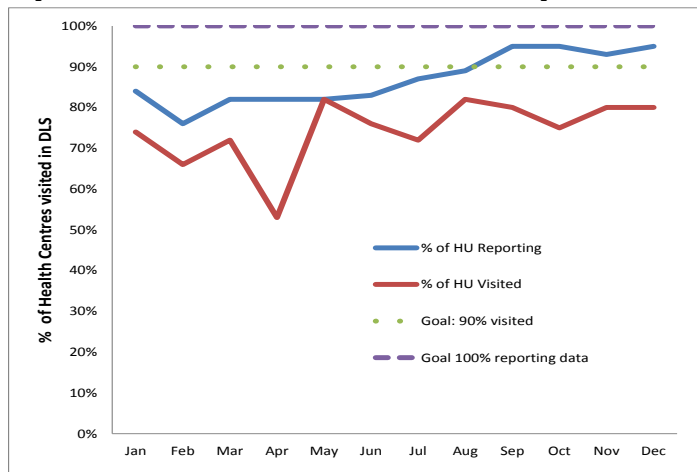
- ↑ Maputo and Gaza usually reach the delivery level within 40 days, while maintaining low levels of stockouts.
- ↑ The percentage of health centers visited within less than 33 days increased from 20% at the beginning of the year to 55% in December.
- ↑ Niassa recorded large improvements over the second and third quarters of the year 2014. In comparison to 2013: an average of 33% of the health centers were visited in 2013, compared to the much improved average of 74% by the end of 2014.
- ↓ The level of performance in Cabo Delgado declined from an average of 61% of health centers visited in 2013, to an average of 49% in 2014. The specific challenges registered in this province are the financial flow and the transfer to other departments of technical staff experienced in vaccine distribution.



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Inputs: Health Centers Visited and Data Reported



↑ The percentage of the health centers that report monthly remained stable in the first six months of the year, and improvements were observed as of the month from July up to the end of the year, due mainly to the improved performance in Niassa.

↓ The low number of health centers visited in February was due to the arrival of the rainy season, which prevented access to the rural areas, with this being a yearly occurrence.

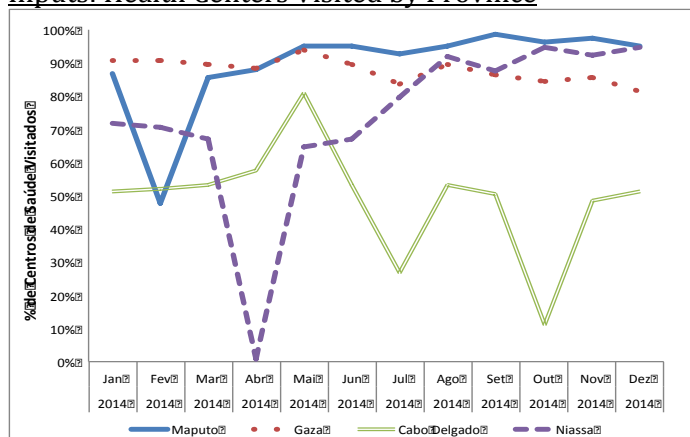
It is useful to look at health centers visited by province to see the variability of performance among provinces, both improvements and increasing challenges.

↑ Niassa recorded significant improvements in the last six months of the year 2014, to the point of consecutively besting all provinces over the last three months of the year. The blip in April was due to the government vehicle not being available and inadequate coordination and planning for distribution, which clearly subsequently improved.

↓ Cabo Delgado moved to a reduced DLS in July due to government constraints for cost-sharing. Despite confirmation that the DPS in Cabo Delgado would cover all of the vaccine distribution costs starting in September, delays in disbursements and staff turnover resulted in late or no distributions towards the end of the year.

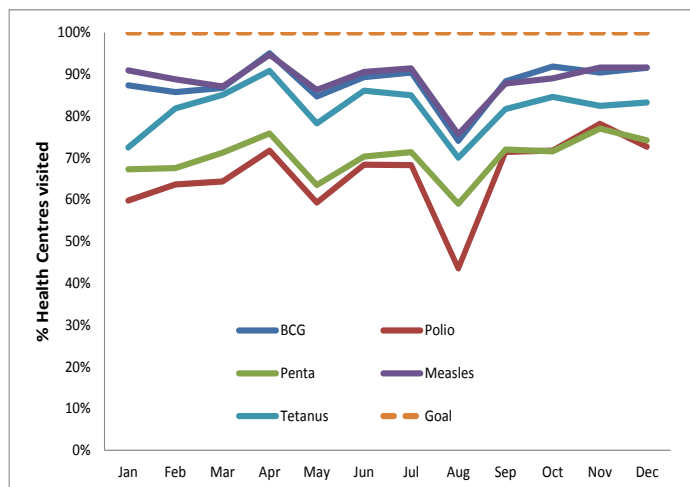
↑ In Gaza the percentage of the health centers visited remained stable throughout the year with a slight decline in August due to non-functioning refrigerators thus no need to deliver vaccines.

Inputs: Health Centers Visited by Province



Outputs: Full Delivery of Vaccines

The first six months of 2014 saw a constant and stable trend to full vaccine delivery. While the target is 100%, we recognize that the ideal quantity of stock used for this indicator may not be accurate, due to lack of precision of the population data. The quantities of delivery are based on real-time data at the time of delivery; as such, there is a stable trend indicating regular distribution and use, despite not reaching the target of 100%.



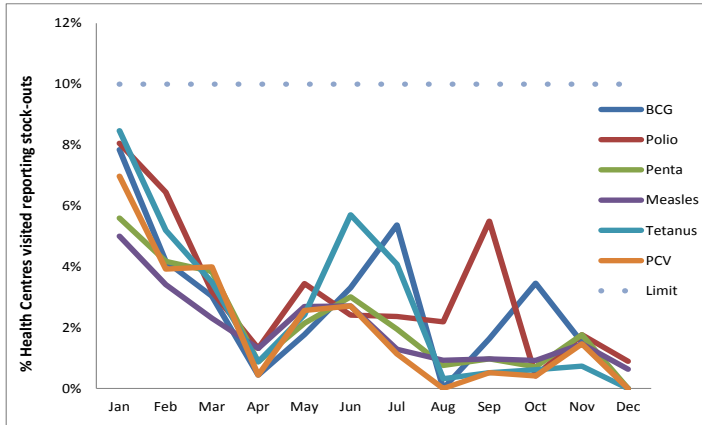
↓ In April, Niassa managed to cover only one health center and, as such, reached 100% full delivery for that health center; what was not captured are the more than 100 health units that were not visited, which accordingly did not receive any vaccine.

↓ In August, there was a national stockout for the polio vaccine, which affected normal vaccine distribution in all provinces. Maputo and Gaza, which had sufficient reserve stock, managed to avoid a stockout at the health centers. The delay in distribution in the attempt to resolve the polio stockout naturally affected full delivery of the other vaccines in the month of August.

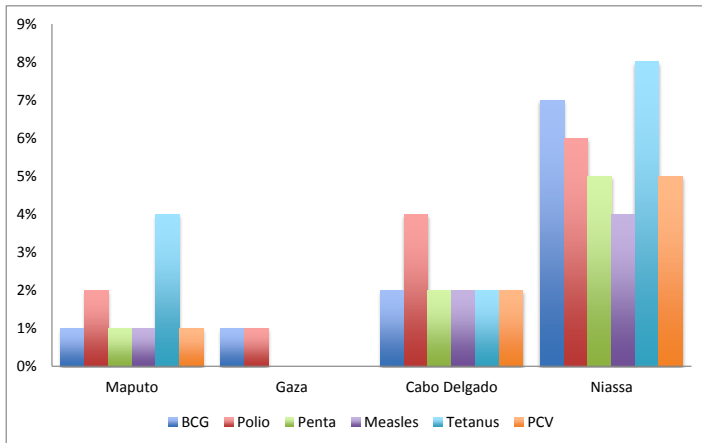
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Outputs: Stockout by Vaccine and by Province



- ↑ Stockouts remained relatively low throughout the year, ending in less than 6% overall.
- ↓ Due to the lack of distribution in Niassa in April, the significant reduction of stockouts reported in that month is not a realistic reflection, since the indicator does not capture any information on the health units that were not visited.
- ↑ Niassa recorded significant improvements in overall distribution beginning in July, resulting in low stockouts. Data visibility through SELV contributed significantly to improvements in vehicle and cold chain management, as well as supply chain management procedures.

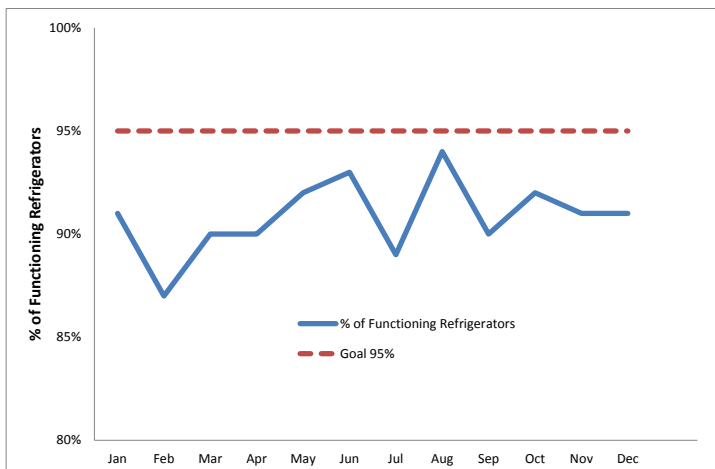


As with the other indicators, in analyzing the data by province, it is easy to see the performance gaps.

- ↑ During this period, Maputo and Gaza maintained a very low level of stockouts for all of the vaccines.
- ↑ Cabo Delgado had considerable improvements in its average stockouts, maintaining average values of 2% in 2014, compared with the 9% average recorded in 2013.
- Niassa continues to register problems with vaccine stockouts, although it has recorded a significant improvement, specifically in the second half of the year. The average percentage of stockout is between 4% (measles vaccine) and 8% (tetanus), a great improvement over the previous year.

Outputs: Functioning Refrigerators

Issues with the cold chain are mostly related to a lack of spare parts, including solar batteries, and the unavailability of the technician for regular preventive and corrective maintenance.



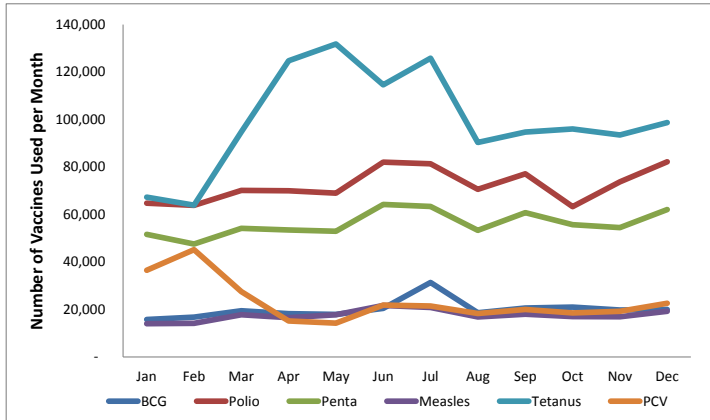
- ↑ Gaza Province persistently has a very strong cold chain (97% functioning at the end of the year). ColdTrace is being used as an electronic system for monitoring and recording of the temperatures, resulting in improved reaction to temperature excursions and cold chain functioning.
- ↑ The performance of Niassa's cold chain improved over the year by introducing regular visits by the cold chain technician during monthly distribution.
- ↑ Cabo Delgado repaired some previously non-functioning refrigerators to have improved performance throughout the year.
- At the end of the year, 17% of the refrigerators in Maputo were broken due to a lack of spare parts. Vaccine services continued at the service provision points, with mobile thermal insulation boxes delivered regularly from the district every week.



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Outputs: Vaccines Used



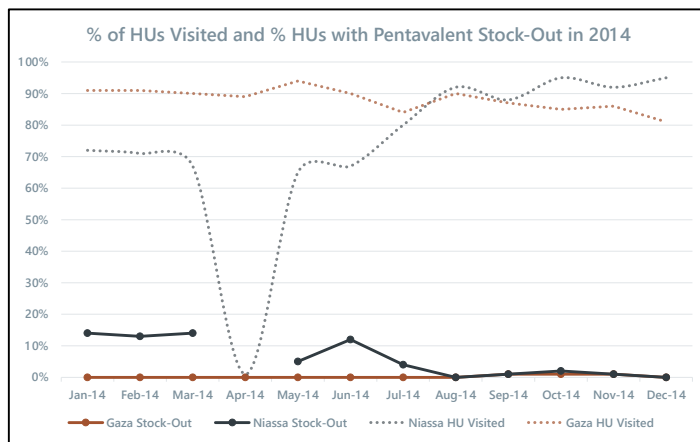
↑ Use of vaccines was relatively stable over the period addressed in this report, with two exceptions to be considered:

- The increased use of the tetanus vaccine from March to July reflects the school year and the school-based approach for this vaccine.

↑ Following its introduction and as to be expected, the PCV vaccine stabilized as of June.

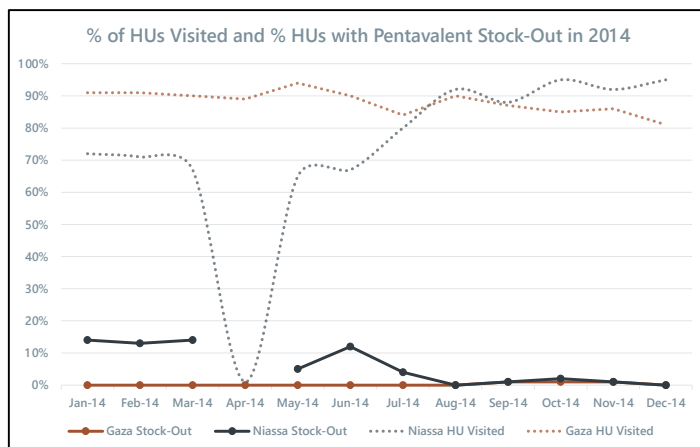
↑ Despite there not having been any distribution in Niassa in the month of April, the administration of vaccines continued, in line with the reflection illustrated by the stable numbers throughout the year.

Outputs: Triangulating Data Points



System Performance: Regular visits continue to correlate with decreased stockouts.

Comparing Gaza and Niassa shows the differences between provinces in DLS implementation as well as the correlation between regular visits and decreased stockouts. Niassa has shown significant performance improvements in the last six months which are reflected in stock-out rates.



Cold Chain Data: Regular visits correlate with cold chain uptime data

Comparing Niassa and Gaza shows impact of regular visits with fridge uptime. In Niassa, as visit rates improved, fridge uptime also improved.