Next generation immunization supply chain lowers health system costs in DRC

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VillageReach, in collaboration with the government of Equateur Province and its partners, is supporting the implementation and evaluation of an optimized supply chain model, Next Generation Supply Chain (NGCA).

**CONTEXT**

The primary aim of NGCA is to improve commodity availability at the service delivery point (SDP). NGCA features include:

- Introducing direct deliveries to SDPs
- Lengthening replenishment intervals, and
- Sharing distributions with other commodities.

**IMPLEMENTATION**

To evaluate NGCA cost-efficiency and cost-effectiveness.
## Supply Chain Tiers

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### Supply Chain Costs by Function

**SUPPLY CHAIN COSTS BY FUNCTION**

**SUPPLY CHAIN COSTS BY TIER**

**TOTAL SUPPLY CHAIN COSTS**
Evaluation Periods

Period I (Pre-CCE)
Baseline; The 12-month period between September 2015 - August 2016 prior to CCE introduction.

Period II (Post-CCE)
Baseline; The 6-month period between October 2016 - March 2017 after CCE introduction and prior to the NGCA implementation.

Period III (NGCA)
Endline; The 5-month period between September 2017-January 2018 during NGCA implementation.
Total Estimated Provincial Costs for NGCA

TOTAL: $642,627

- **Management**: $19,447
- **Transport**: $288,048
- **Storage**: $330,215

Period III (NGCA)
NGCA has Resulted in Supply Chain Cost Reductions

*Note: Due to challenges with data collection of provincial management costs during Period II, we adjusted costs in Period I and II to be consistent with the data captured for Period III.
Total Provincial Cost Estimate by Function

- **Period I (pre-CCE)**
  - Management: $230,568
  - Transport: $677,549
  - Storage: $375,295
  - TOTAL: $954,348

- **Period II (post-CCE)**
  - Management: $45,405
  - Transport: $556,829
  - Storage: $388,048
  - TOTAL: $974,237

- **Period III (NGCA)**
  - Management: $19,447
  - Transport: $330,215
  - Storage: $288,048
  - TOTAL: $642,627
Reduction in Transport Costs Through Direct Delivery = Decrease in Total Provincial Costs
NGCA Results in a Redistribution of Costs from SDP and Zone to Provincial Level

NGCA consolidates costs and management functions to higher levels, reduces overall costs.
SDP Costs: Total and by Supply Chain Function

- Period I (pre-CCE) Total SDP: $421,686
  - Storage: $110,650
  - Transport: $210,176
- Period II (post-CCE) Total SDP: $392,483
  - Storage: $204,298
  - Transport: $37,075
- Period III (NGCA) Total SDP: $241,373
  - Storage: $211,510
  - Transport: $281,833
Zonal Costs: Total and by Supply Chain Function

- Period I (pre-CCE): $304,896
- Period II (post-CCE): $295,209
- Period III (NGCA): $97,117

Storage:
- Period I (pre-CCE): $61,821
- Period III (NGCA): $43,252

Transport:
- Period I (pre-CCE): $61,821
- Period II (post-CCE): $189,481
- Period III (NGCA): $45,116

Management:
- Period II (post-CCE): $8,748
- Period III (NGCA): $26,807

Zone Total:
- Period I (pre-CCE): $304,896
- Period II (post-CCE): $295,209
Provincial Costs: Total and by Supply Chain Function

- Period I (pre-CCE): $0
- Period II (pre-CCE): $82,665
- Period III (NGCA): $104,137
- Period II (post-CCE): $84,330
- Period I (pre-CCE): $15,305
- Period III (NGCA): $15,615
- Period I (pre-CCE): $11,525
- Period II (post-CCE): $304,137

Storage
Transport
Management + Procurement
Province Total
Total cost estimate of expanding NGCA to all 18 zones in Equateur Province is $642,627/year.

* Does not include costs of expansion, periodic evaluation or governance strengthening.

Cost-efficiency increased as a result of:

A) decrease in costs across SDPs and Zones; &
B) an increase in the volume of vaccines moving through the supply chain during NCGA.

Conclusions

SUMMARY

- Supply chain costs have decreased for SDP and Zones because of NGCA. Estimated decrease for SDP and Zones combined is $378,405.
  - 84% of this $378,405 decrease can be attributed to transportation costs.
  - There was also a reduction in storage costs for Zones, due to direct delivery to SDPs and reduced Zonal effort managing inventory.
- Provincial transport costs increased by 144% due to the added responsibility of direct deliveries.
  - Transportation cost reductions at the SDP and Zone levels can sufficiently cover the increase in transportation costs at the Provincial level.

KEY FINDINGS

- Total cost estimate of expanding NGCA to all 18 zones in Equateur Province is $642,627/year.
  * Does not include costs of expansion, periodic evaluation or governance strengthening.
- Cost-efficiency increased as a result of: A) decrease in costs across SDPs and Zones; & B) an increase in the volume of vaccines moving through the supply chain during NCGA.
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