

Evaluating Last Mile Distribution Systems in Nigeria



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The primary aim of the results of this study is to determine the design features essential for an effective last mile distribution system.

Direct Delivery and Information Capture (DDIC)	Information capture & Delivery occur simultaneously	Dependent on non service delivery point (SDP) personnel
LGA Review Meetings/ Information Capture Then Direct Delivery (IC&DD)	Information capture & Delivery occur independently	Dependent on non SDP personnel
Review & Resupply (R&R)	Information capture via inventory counts	Dependent on SDP personnel
Cluster Review Meetings / Review and Direct Delivery (R&DD)	Information capture via inventory records	Dependent on SDP personnel

In Nigeria, there are multiple last mile distribution systems, some operating within the same state with similar implementing partner management structure and norms. This provides the opportunity to answer the question of how different design choices affect costs and other performance indicators of these last mile distribution systems.



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INVENTORY PERFORMANCE OF LAST MILE SYSTEMS

Ebonyi and Bauchi DDIC show steady improvement in stockout levels over the length of the pilot. All last mile systems including DDIC achieved stockout rates in the range of 2-8%.

COSTING LAST MILE SYSTEMS

Supply Chain Scale (Number of facilities and annual volume distributed) varies across systems and should affect costs

- At their respective scales, DDIC Bauchi (305 m3) has lowest cost per m3 delivered (\$1,910) Review and Resupply (14 m3) has the highest cost per m3 delivered (\$20,859)
- At their respective scales, IC&DD HIV Benue has the lowest cost per \$ of commodity delivered (\$0.133 vs. Bauchi DDIC at \$0.142 and Review and Resupply Bauchi at \$1.73)

COMPARING COSTS ACROSS SYSTEMS

Further cost estimation: what would the systems cost if they distributed the same volume of commodities to the same number of facilities as DDIC Ebonyi?

- DDIC Ebonyi chosen because it is midpoint between other systems with respect to volume & number of facilities

Cost Comparison Results: DDIC and IC&DD have the lowest costs when scale is the same as DDIC Ebonyi



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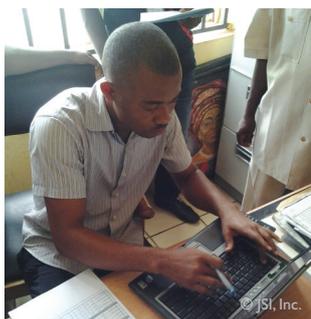
Observations from Comparing Costs

R&R	System hampered by amount of inventory facility worker can carry on public transport (assume 0.03cbm)	Facility labor costs higher than R&DD because of higher number of review meetings	Actual information capture, transport, storage costs are lowest for all systems
R&DD	Though delivery is separate from information capture, cost of logistics and information capture through review meetings (stipends) is still more costly than DDIC		
IC&DD	Cost of information capture is greatly reduced (stipends for facility visits)	Delivery is optimized – direct delivery from central warehouse	
DDIC	Savings from information capture and delivery occurring at same time; comparable to IC&DD		

SCALABILITY

Scalability Result: All systems show economies of scale with increasing number of commodities.

- DDIC and IC&DD have lower costs as number of commodities increase



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IMPLEMENTATION COSTS

R&DD Malaria implementation costs are highest (at \$80,834) with R&R costs the lowest (\$10,029). DDIC is the second highest at \$61,782

DATA QUALITY PERFORMANCE

DDIC & R&R, which capture information via inventory counts, have Inventory accuracy results which are at least twice that of R&DD and IC&DD.

Ebonyi DDIC

Contraceptives	78%
Malaria commodities	82%

Bauchi DDIC*

Contraceptives	79%
Malaria commodities	75%

R&R

Sokoto R&R (FP)	80%
Bauchi R&R (FP)	62%

Inventory accuracy is measured based on percentage of inventory records within five percent of audit.

ADDITIONAL PERFORMANCE MEASUREMENTS

Performance of DDIC is similar to that of other Last Mile Systems

- Average reporting rate in 2013 for all systems was 90%
- Average time to database was 24.5 days

CONCLUSION

DDIC and IC&DD generally cost less than other systems; but DDIC outperforms on most other metrics.