Relationship Between Procurement and Implant Insertion Rates

Methodology Using Country Data

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Reproductive Health SUPPLIES COALITION

Research questions

Background: As a result of volume guarantees by implant manufactures, secured in part through assistance from the Bill & Melinda Gates Foundation, country procurements of contraceptive implants have exceeded growth expectations.

- Do increased implant procurements lead to greater availability throughout the country supply chain and thereby increase access and use by women?

- Or have larger procurements led to excess stock?

Assumptions

- Products need to be procured in advance of insertions. They flow through the length of the pipeline to be available as a choice at the SDP for a woman. The longer the pipeline, the further in advance a product needs to be procured for an insertion.

- Inventory holdings are critical at each level of the supply chain to buffer against uncertainty of demand.
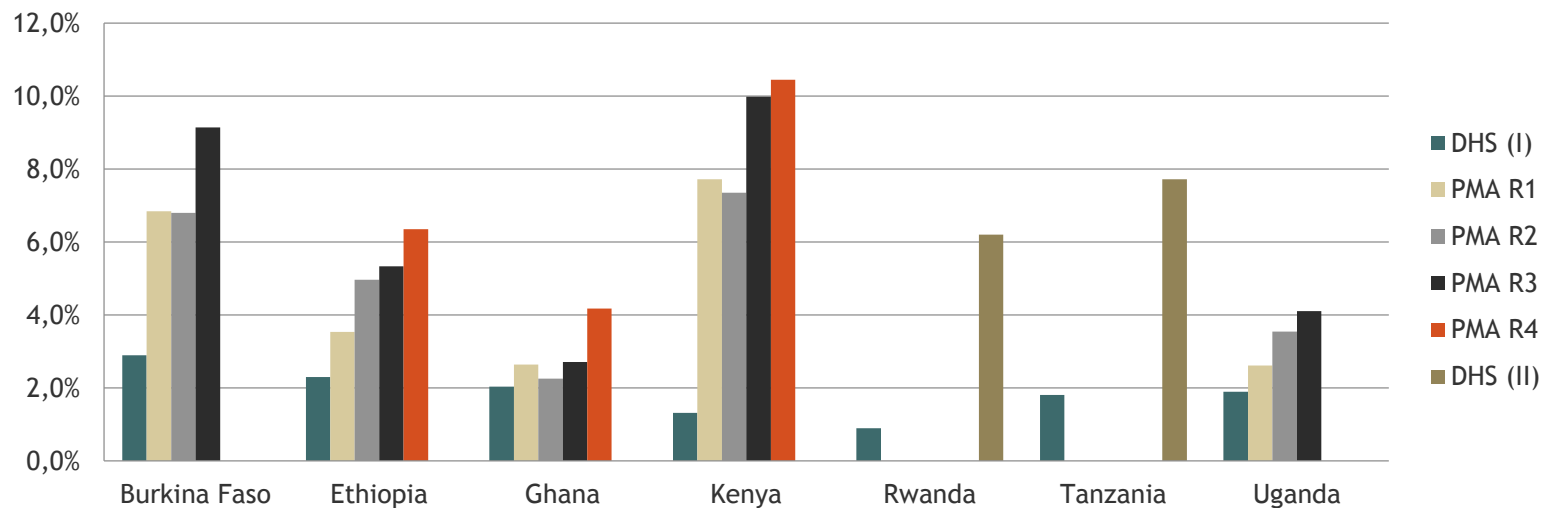
Methodology

Demonstrate the relationship between insertions (estimated or actual) and procurements using country specific data

1. Estimate volume of implant insertions using survey and population data, or actual consumption data
2. Collect data on procurement volumes entering the country
3. Establish assumptions and context for current state of country supply chain; inventory requirements to meet insertion demands based on specific supply chain parameters
   - The length of the in-country pipeline (including safety stock levels and lead time requirements)
4. Compare estimated stock on hand with desired quantity needed in inventory to meet demand
5. Quantities needed for wastage, or training were not incorporated

Contraceptive prevalence rate & implant share rose rapidly from 2011 to 2015

- mCPR figures and method share of implants have been increasing in almost all settings where large amounts of procurements have taken place.
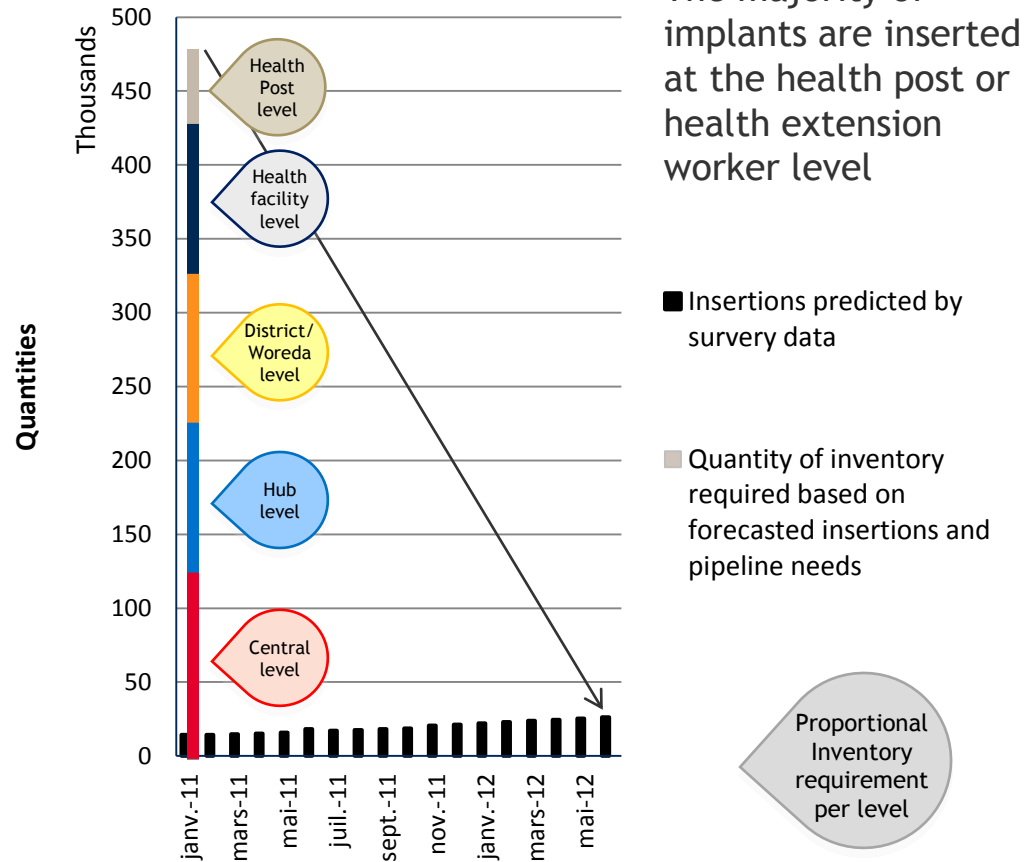
Implant Use Prevalence

Legend: DHS (I), PMA R1, PMA R2, PMA R3, PMA R4, DHS (II)

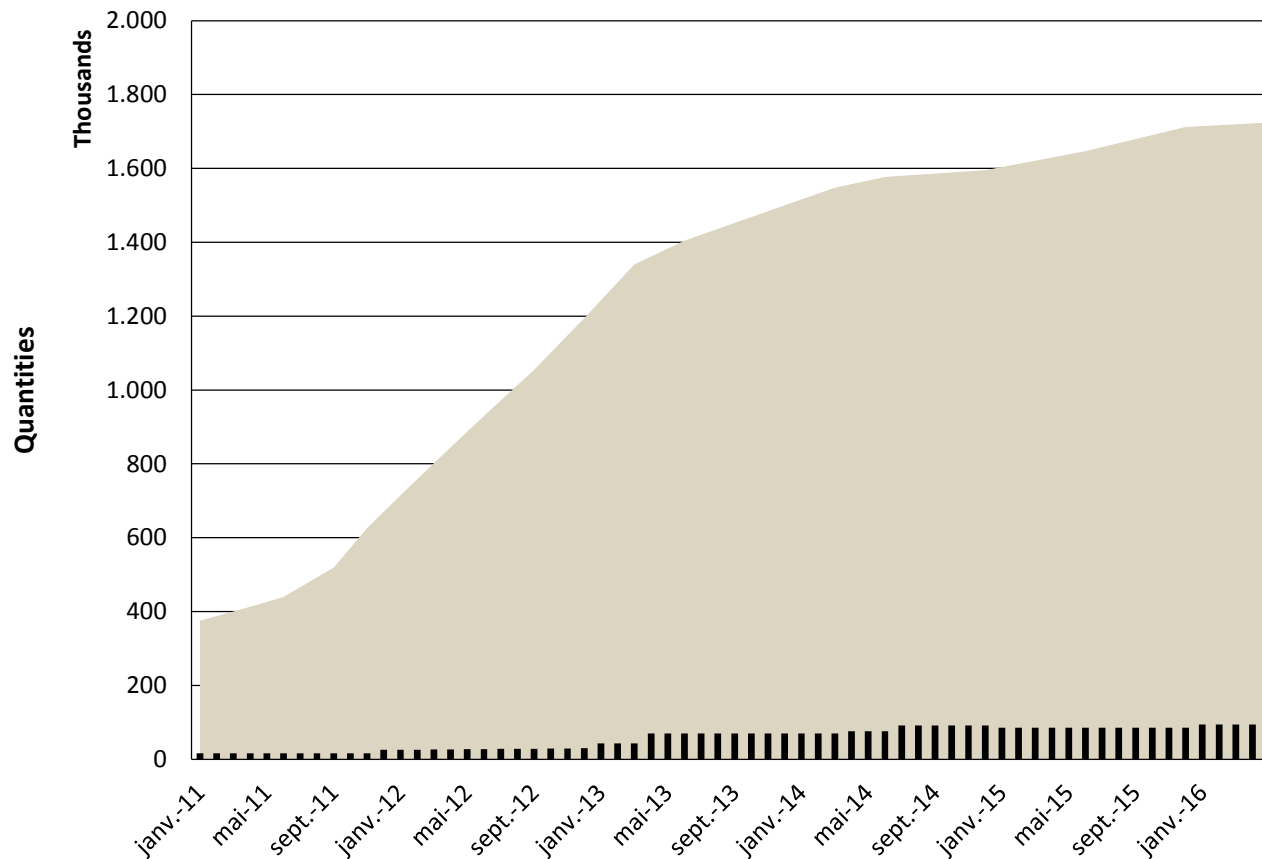Countries: Burkina Faso, Ethiopia, Ghana, Kenya, Rwanda, Tanzania, Uganda

Inventory is required in advance of insertions-Ethiopia example

For inventory to be available for a given insertion, the entire pipe must be filled ahead of time. For Ethiopia, this means that 18 months of inventory must be available throughout the supply chain nodes on day of insertion, to account for demand volatility at each point in the supply chain and ensure inventory is available at all SDPs.

For example, in order to meet 26,315 clients' needs in June 2012, 473,677 units need to be in the pipeline. Since the pipe is 18 months long, all relevant procurements must have been completed in January 2011 to flow through the supply chain and be available at the SDP.

The majority of implants are inserted at the health post or health extension worker level

■ Insertions predicted by survery data

■ Quantity of inventory required based on forecasted insertions and pipeline needs

Proportional Inventory requirement per level

Health Post level

Health facility level

District/ Woreda level

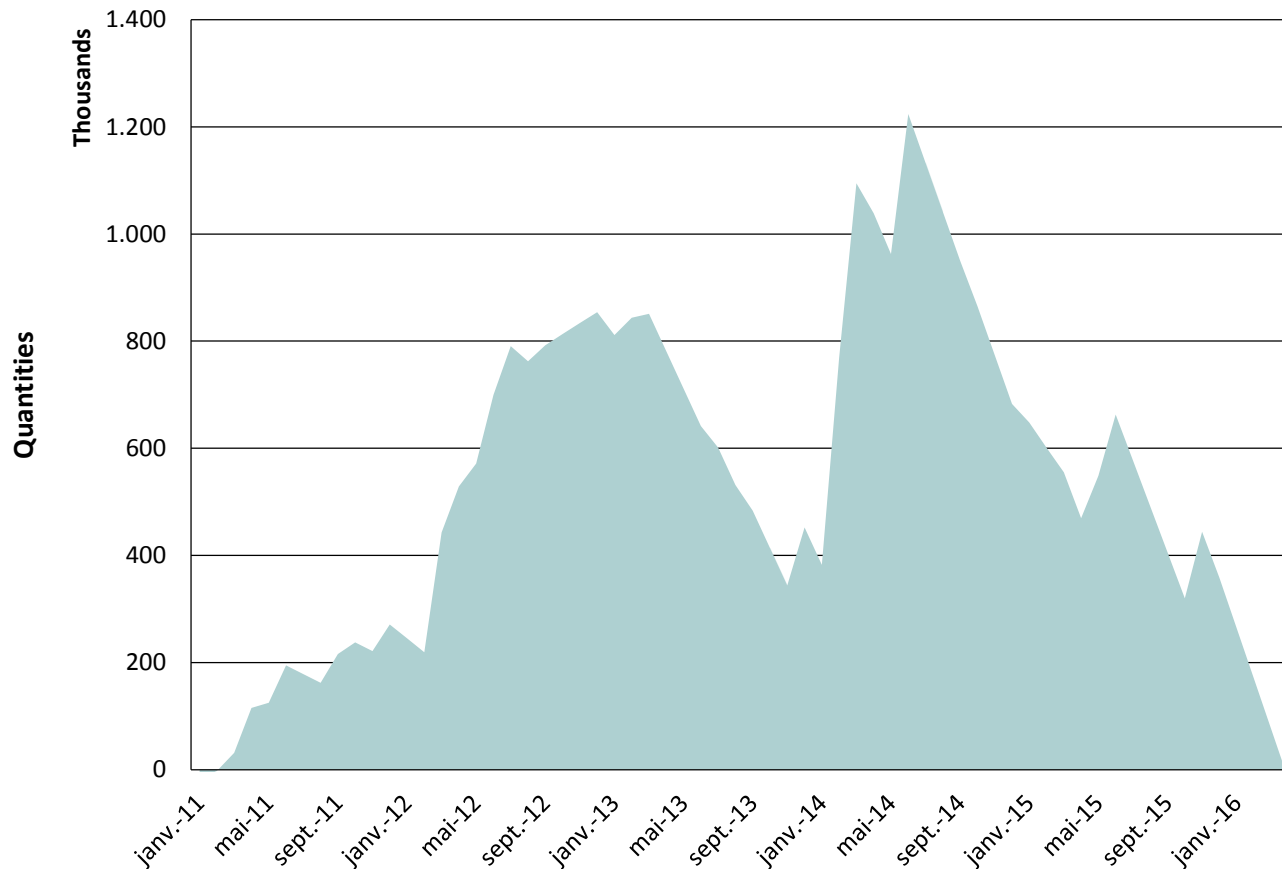Hub level

Central level

Quantities

Thousands

Inventory required to meet insertion demands from 2011 through mid-2017

What we would want in inventory to meet insertion demand

Calculated stock on hand
## Based on procurement arrivals in country & insertions

What we assume was actually available.

# Comparison of required inventory & calculated stock on hand-Ethiopia

- Quantities procured have not been not enough to fully fill the pipeline as insertion rates rapidly rose. Only in 2014 did we start seeing higher levels of calculated stock on hand compared to desired inventory levels.

- Kitted shipments have been slow in 2015/2016 and stock outs have been reported at SDPs.
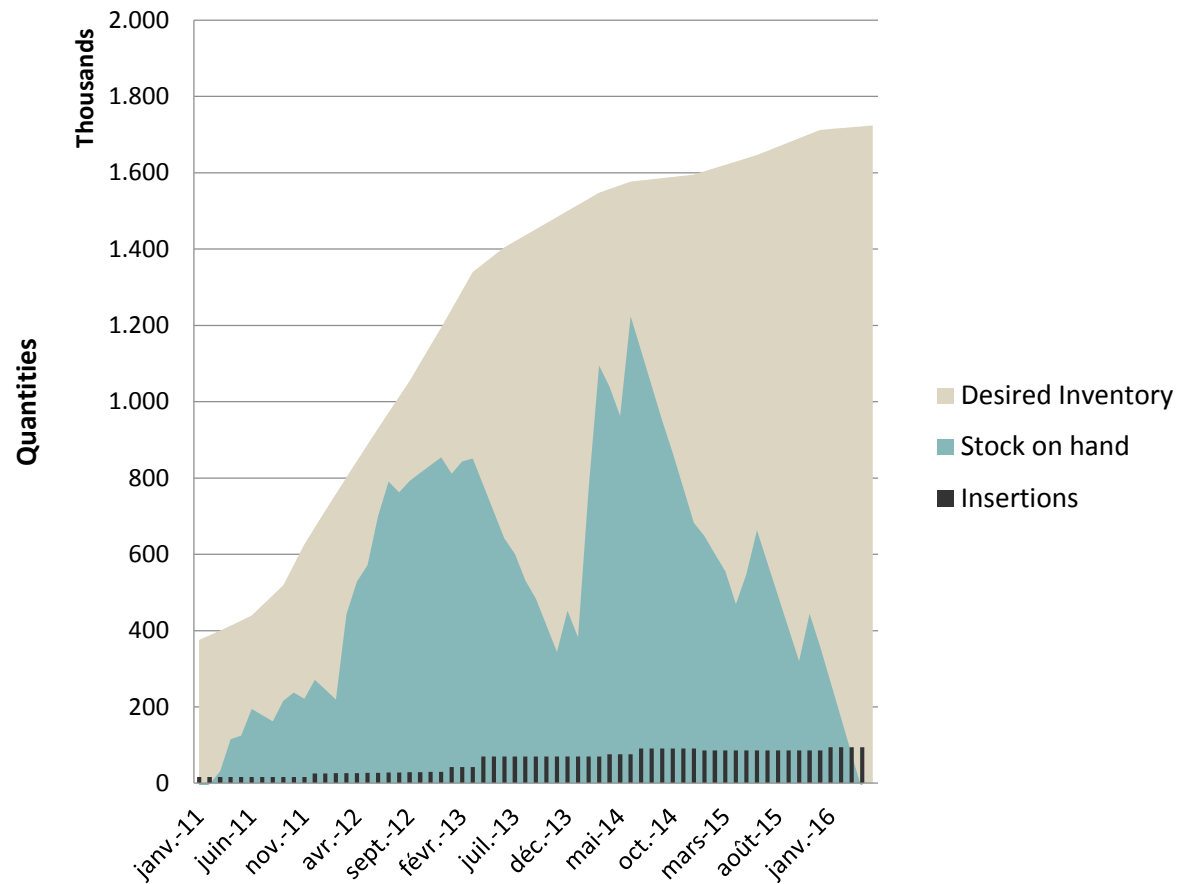
**Assessments on current stock levels are difficult to determine without knowing future insertion levels.

Comparison of required inventory & calculated stock on hand-Tanzania

- Quantities procured from January 2011 through 2015-2016 have not been enough to fully fill the pipeline in Tanzania as insertions rapidly rose.

- Only in 2015, with very high levels of procurement, do we see a close match between estimated inventory levels needed to fill pipeline to meet demand and estimated stocks on hand.
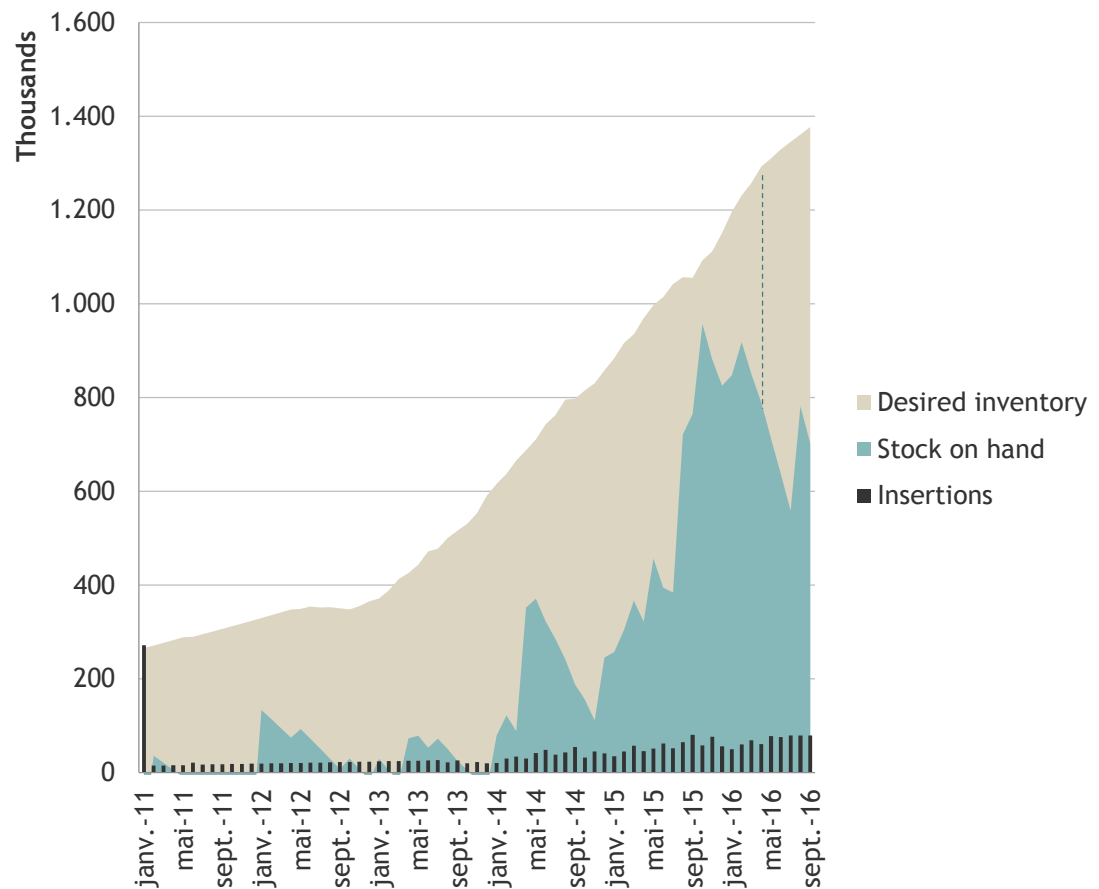
Desired inventory
Stock on hand
Insertions

**Assessments on current stock levels are difficult to determine without knowing future insertion levels.

Findings

- Inventory needs to be made available in advance of service in order to make choice of product and increasing mCPR possible.
  - This advanced time is equal to the length of pipeline and inventory parameters.
- High quantities of inventory/procurements are needed to fill the pipelines and should not be considered excess stock.
- Assessments on current stock levels are difficult to determine without knowing future insertion levels.
- To decrease the amount of inventory required and continue to provide the same level of service, supply chains needs to be made more efficient (e.g., decreasing the number of distribution points/length of the pipeline, increase delivery frequency, holding safety stock at lower points in the supply chain).