

Family Planning Supply Chain Impact Evaluation in Indonesia

An impact evaluation of supply chain strengthening interventions implemented in 11 districts





SEPTEMBER 2018

My Choice Endline Assessment Report

This document was produced by JSI Research & Training Institute, Inc. (JSI) under the My Choice Project (PilihanKu), with funding through the Johns Hopkins Center for Communication Programs, beginning November 1, 2014. The supply chain component of the project is implemented by JSI with the objective of strengthening contraceptive commodity supply chains and improving contraceptive availability in 11 districts in four select provinces in Indonesia.

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Abstract

This report describes an endline assessment of the family planning supply chain in the My Choice districts in Indonesia to understand the impact of the supply chain system strengthening interventions and to provide related recommendations.



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Acronyms / Abbreviations

BKKBN	National Family Planning Coordinating Board of Indonesia
BL	Baseline Assessment
CPR	contraceptive prevalence rate
СТИ	contraceptive technical update
DKI Jakarta	Special Capital Region of Jakarta
eLMIS	electronic logistics management information system
EL	Endline Assessment
FEFO	first-to-expire, first-out
FP	family planning
FEFO	first-to-expire, first-out
FP	family planning
IUD	intrauterine device
JSI	JSI Research & Training Institute, Inc.
LARC	long-acting reversible contraceptive
LIAT	Logistics Indicators Assessment Tool
LSAT	Logistics System Assessment Tool
LMIS	logistics management information system

M&E	monitoring and evaluation
mCPR	Modern Contraceptive Prevalence Rate
MIM Tool	Inventory Management & Monitoring Tool
MOS	months of stock
NGO	non-governmental organization
ODK	Open Data Kit
ОЈТ	On the job training
puskesmas	public health center
QIT	Quality Improvement Team
R&R	reporting & recording
SBBK	delivery note
SCM	supply chain management
SDP	service delivery point
SOH	stock on hand
SOP	standard operating procedures
тос	theory of change
UI	Universitas Indonesia – Center for Reproductive Health



Overview and Background

My Choice Project

The "My Choice" project's vision is to contribute to the Government of Indonesia's family planning (FP) goal to increase the nation's modern contraceptive prevalence rate (mCPR) to 61.3% by 2020. The My Choice project is designed to create a consumer-focused, consumer-driven approach to assist Indonesia in addressing its stagnating CPR, unmet need, and skewed method mix where long-acting reversible contraceptives (LARCs) have fallen out of use. My Choice works in partnership with the national family planning board, BKKBN. By focusing on both demand- and supply-side factors including consumer life stage, facility readiness/postpartum FP, supply chain management (SCM), and leadership and advocacy, as well as decentralized data collection, analysis, and use, My Choice is developing an integrated demand-supply model to reach a new generation of FP adopters.

My Choice's goal is to increase mCPR by five percentage points in each of the 11 districts where the project is working, thus contributing to the national goal.

JSI Research & Training Institute, Inc. (JSI) is contributing to the supply chain management component with an aim to increase contraceptive availability of BKKBN-supplied methods at BKKBN-registered service delivery and resupply points (SDPs) in the targeted four My Choice project provinces and 11 project districts.



Supply Chain Management

The goal of the supply chain component is to improve contraceptive availability and reduce stock out rates at SDPs and provincial and district warehouses. The baseline assessment observed that only 55% of all SDPs had all methods available in stock. The project aimed to achieve a 15% percentage point improvement in availability to 70%. Improved supply chain performance will ensure improved access to a full range of contraceptive methods and contribute to the larger outcome of the My Choice project to increase CPR by 5% in the project districts.

My Choice has introduced a systems approach with an aim to strengthen the supply chain workforce at each level, empowering them with new tools, skills and information that will enable holistic and continuous supply chain improvement. The My Choice team collaborated with stakeholders to design a comprehensive package of data centric supply chain interventions that address critical gaps in the system. The project focuses on four focus areas described in the next section and are guided by three core themes – strengthening organizational capacity, fostering collaboration and accountability, and inculcating a culture of data use for continuous supply chain improvement.

SUPPLY CHAIN IMPROVEMENT PROCESS

NOVEMBE 2015	R Design syster strengthenin solutions	n g APRIL 2016 JANUARY 2018	Impact evaluation; identify successes fc scale up	or 2018- 2019
	•		O	
Baseline assess Identify bottle and need	ment. necks FEBRUARY s 2016	Implement, monitor a make course correctio if needed	on FEBRUARY 2018	Scale up to other districts

Project Interventions



Inventory Management

Bottleneck: The use of service targets to make resupply decisions and lack of an appropriate inventory control system caused unequal distribution of contraceptives across resupply and service delivery points resulting in significant number of stock imbalances and stock outs.

Solution: The project designed and implemented a dynamic consumption-based inventory control system using fixed distribution schedules and standardized trigger points that facilitate emergency supplies or reallocations making the system more adaptable to changes in demand.



Bottleneck: A strong supply chain system requires timely and good quality logistics data. BKKBN has a robust LMIS but poor record management at SDPs has compromised the quality of reports resulting in limited use of the data.

Solution: The project has built capacity of warehouse and SDP staff by equipping them with job aids and video tutorials with an aim to improve accuracy of records and reports.

Quality Improvement Teams

Bottleneck: Supply chain functions cut across multiple divisions and levels that operate in silos. Minimal communication and coordination across these divisions has resulted in inefficiencies within the supply chain system.

Solution: The Quality Improvement Team (QIT) model is a mechanism that fosters multi-division/level collaboration and inculcates a culture of data use for supply chain performance monitoring and improvement.



Mentorship and On-the-Job Training

Bottleneck: The FP program lacks a mechanism for routine monitoring and supervision. Additionally, high staff turnover makes capacity building challenging.

Solution: A mentorship and on the job training program has been introduced to build capacity of SDPs through coaching and feedback. Mentors also use a monitoring checklist that provides an additional dimension of data that can be used for decision making.



Summary Findings

The endline assessment explored whether these interventions were able to address these the bottlenecks to inform recommendations on what could be scaled up to other districts and provinces. Here is a summary of the overall findings:

Product Availability	Availability of contraceptives has improved significantly. Endline assessment observed that 68% of all SDPs had a full range of contraceptives available on the day of the assessment, compared to 55% during baseline. Availability of injectables showed the most improvement from 70% during baseline to 97% at endline. On average across all methods there has been a 47% reduction in stock outs at SDPs.
Quantification & Procurement	Delays in the procurement process at the central level continue to have a significant impact at the lower levels. Previously service targets were the only data used to forecast needs which led to stock imbalances throughout the system. In 2017 the project supported BKKBN to develop a Quantification Reference Book, which includes consumption, service and demographic/target based forecast methods. This was implemented in 2017, however the impact is yet to be seen.
Inventory Management	The baseline assessment identified the use of service targets to make resupply decisions and an inadequate inventory control system as two critical issues causing stock imbalances. To address this the project developed consumption based resupply procedures and an Excel based tool to calculate resupply and support allocation decisions. At endline it was found that in provinces and districts where there was good adherence to these procedures there was improved inventory management. Complementing the inventory management system, the project introduced standardized distribution schedules that had a positive impact on contraceptive availability.
Distribution	55% of SDPs reported that the distribution procedures were now every second month, however only 38% reported that they actually receive supplies on this schedule. Analysis of stock outs as compared to delivery frequency indicated that stock out rates were reduced when products are delivered per the distribution schedule. During qualitative workshops participants acknowledged that the inventory management system works best when the distribution timeline is adhered to as documented in the SOP.

Summary Findings

Logistics Management Information System	BKKBN has a strong LMIS, but long standing data quality concerns have hampered its use. At baseline only 24% of all sampled facilities maintained appropriate stock keeping records and by endline this had increased to 80%. Stock card accuracy has also shown significant improvement with 64% at endline compared to 34% at baseline. Endline results also showed that SDPs using and maintaining accurate stock cards experience fewer stockouts.
Storage	At baseline 89% of facilities met at least 70% of the key storage conditions; by endline this had increased to 94%. The biggest improvement was adherence to First to Expire, First Out procedures which increased from 56% to 80% of facilities at endline. The percentage of facilities with a temperature monitoring device increased from 11% to 42% at endline. Observations found that most facilities were within the recommended temperature range both at baseline (92%) and endline (95%).
Monitoring & Supervision	To address challenges in coordination and lack of skills the project aimed to strengthen the organization capacity through improved mentorship and through quality improvement teams. The quality improvement teams met on 61% of the expected number of times but had success in addressing stock imbalances and poor data quality through the review of data on the MIM tool. With regards to mentorship at baseline, only 58% of facilities and warehouses reported that they had received supervision that included family planning or supply chain management, and by end line this increased to 87% and this was linked to improved data quality and overall supply chain management practices.



Figure 2: Percentage of SDPs stocked out on the day of the assessment

Figure 3: Percentage of SDPs with adequate stock (0.5 to 5 months) on the day of the assessment



37% increase in number of SDPs with adequate stock*

*Average of All Methods

15% fewer SDPs stocked out * 21% greater SDPs with adequate stock * * 2017Average of All Methods

Figure 4: My Choice districts vs. rest of the country



235%

increase in number of SDPs using stock cards

89%

increase in number of accurate stock cards *

Figure 5: Stock card usage and accuracy at SDPs



*matching physical stock

Recommendations

Project findings highlight the need of optimizing contraceptive supply chain management through better collaboration between stakeholders at all levels of the FP supply chain through better use of logistics data to guide decision making. The project recommends the following to be maintained and scaled up:

Quantification & Procurement

It is recommended that BKKBN central continue to use multiple data sources to develop forecasts and use standardized parameters for calculating quantities to be supplied to each province. The Central level should monitor each province's stock status regularly and implement standard operating procedures for making emergency supplies and reallocations between provinces to correct stock imbalances. In addition, it is recommended that adequate budget be allocated towards distribution costs for making emergency supplies and reallocations in a timely manner.

Inventory Management

It is recommended that the consumption based inventory control system established in the project regions be reinforced in training and monitoring and supervision in current provinces and in those provinces where they are being scaled. Supervisors should ensure that all staff managing products have the appropriate guidelines , job aids and resupply tools to refer to in undertaking their inventory management tasks. Additionally, it is recommended that a web based Inventory Management & Monitoring (MIM) tool be implemented at province and district level in order to enforce a standardized min max inventory control system which will reduce stock imbalances at district warehouses and SDPs.

Distribution

A well implemented inventory management system requires a fixed distribution schedule to be followed, without which the system cannot work as designed. It is recommended that all resupply points adhere to a routine distribution schedule and ensure timely resupply. Additionally, a staggered schedule using route optimization techniques is recommended to help reduce the workload on distribution managers and optimize distribution costs. Lastly, it is recommended that BKKBN appropriately socialize guidance on the use of special allocation funds available to districts for commodity transport and distribution needs and ensure that the funds are accessible and expended for their intended use.

Recommendations

Logistics Management Information System	The availability and use of quality data is a critical need for a supply chain system to run efficiently. It is recommended that all levels budget adequately to train and mentor staff in the use of appropriate stock keeping records and the importance of using this data for reporting and making resupply decisions. This can be supported by adequate availability of tools and resources such as stock cards and job aids. Lastly, it is recommended that warehouse management information systems be digitized to create efficiencies and improve reporting rates and data quality.
	It is uppermanded that the initial and manteuchis feature on ensuring storage heat substitute and
Storage	implemented such as First to Expire, First Out, and correct temperature monitoring. The project developed posters to provide guidance on best storage practices at warehouses and health facilities. It is recommended that this resource be widely disseminated to provide users with the appropriate knowledge on storage. Lastly, it is recommended that adequate resources be made available to improve storage infrastructure to enable facilities to appropriately store adequate levels of stock.
Monitoring & Supervision	The implementation of an effective monitoring mechanism is key to ensuring that the supply chain workforce complies with the SOPs put in place. It is recommended that quality improvement teams be institutionalized at all levels to use data for decision making and ensure good coordination across the different divisions. Routine supportive supervision visits should be planned and budgeted for in the annual district budgets. To optimize resources districts might consider combining visits with distribution. WhatsApp groups should be established and used to encourage improved coordination and promote communication across levels.



Methodology

Objectives

The main objective of this endline assessment is to measure the impact of supply chain system strengthening interventions that were implemented in the project regions. The findings of this assessment are being used to:

• Provide BKKBN, JSI, and other stakeholders in Indonesia with a situational analysis of the supply chain system for FP commodities at all levels within the project provinces.

• Compare baseline and endline supply chain performance to assess the impact of supply chain strengthening interventions supported by the My Choice project.

• Formulate lessons learned and provide evidence for supply chain policy design.

• Inform decisions on scale up of supply chain strengthening interventions to other regions.

The assessment measured product availability and overall supply chain system performance for FP commodities supplied by BKKBN and included a facility-based quantitative assessment component and a tiered qualitative assessment component.

A before-and-after study design was employed to measure the effects of program interventions on key supply chain performance indicators, using a mixed methods approach. At baseline, a Logistics System Assessment Tool (LSAT) was administered in each of the 11 districts and four program provinces. Additionally, a facility-based Logistics Indicator Assessment Tool (LIAT) assessment was administered in select facilities and family planning warehouses sampled within the program areas. The LIAT was implemented at baseline and again at endline.



Physical count during quantitative data collection

Quantitative Assessment Design

Quantitative data were collected using the LIAT adapted for the Indonesian context and included additional questions specific to the My Choice interventions. The assessment included interviews with key logistics management staff at their worksites, a physical count of contraceptive stock on hand, review of logistics records and reports, and observation of storage conditions. Data were captured on mobile devices using Open Data Kit (ODK) at baseline and Survey CTO at end line. Data collection during the endline assessment was conducted in partnership with the Universitas Indonesia - Center for Health Research.

The sample frame includes facilities (i.e. public health centers, public hospitals, private hospitals, and private clinics), four province and eleven district family planning warehouses within the project regions that received contraceptives from BKKBN in the last 12 months, The sample was constructed to allow for detecting a minimum of a 10-percentage point change in any indicator over time with a power of 0.8 and a two-sided alpha of 0.05. The study design allows for results to be representative of each facility type within the program districts. Facilities were randomly selected using probability-proportionate-to-size of the district.. The baseline assessment included a total of 341 SDPs while 358 SDPs were visited at endline. The detailed sample of service delivery points is shown in the table below.

Province	District	Puskesmas		Hos	pital	Private	e Clinic	Total	
Central Java		Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
	Brebes	19	20	2	2	1	2	22	24
Central Java	Cilacap	17	20	3	3	7	6	27	29
	Klaten	17	17	1	4	27	21	45	42
	Asahan	13	15	2	2	9	4	24	21
North Sumatra	Deli Serdang	17	18	1	1	6	15	24	34
	Medan	19	19	7	7	24	Clinic Totilit Endline Baseline Endline 2 22 24 6 27 29 21 45 42 4 24 21 15 24 34 8 50 34 0 12 11 0 16 18 10 43 44 9 51 65 6 27 36 81 341 358	34	
	Bulukumba	11	10	1	1	0	0	12	11
South Sulawesi	Gowa	13	16	0	Hospital Private Clinic $Total$ aseline Endline Baseline Endline Baseline Endline Baseline Endline 2 2 1 2 22 24 3 3 7 6 27 29 1 4 27 21 45 42 2 2 9 4 24 22 1 4 27 21 45 42 2 2 9 4 24 22 1 1 6 15 24 34 7 7 24 8 50 34 1 1 0 0 12 12 12 9 7 10 43 44 4 100 6 9 51 6 0 5 1 6 27 36 33 46 91 81	18			
	Makassar	24	25	12		44			
DKI Jakarta	Jakarta Timur	41	46	4	10	6	9	51	65
	Jakarta Utara	26	25	0	5	1	6	27	36
Total SDPs		217	231	33	46	91	81	341	358

Figure 6: Sample of BKKBN-registered service delivery points

Qualitative Assessment Design

For the baseline assessment, an LSAT was customized for the MyChoice program. The questionnaire covered several components of an SCM system including procurement and quantification, logistics management information systems (LMIS), inventory management, storage and distribution, and organization and staffing. This data was captured electronically using a web-based tool through one-day workshops in each of the provinces and districts. Participants included representatives from BKKBN central and province levels, district and sub-district FP offices, and service providers from both public and private sectors.

For the endline assessment, qualitative review workshops were held in conjunction with the quantitative data validation exercise. Workshops were held in each of the four provinces with stakeholders from the province and each of the 11 project districts. The objectives of these workshops were

- Disseminate and validate the end line quantitative assessment findings.
- Compare end line performance with baseline and identify any change in supply chain performance.
- Identify successes and challenges to implementation of the supply chain strengthening interventions.
- Formulate lessons learned for application in current and future intervention implementation.
- Develop plans to address challenges identified and strengthen the implementation of the supply chain interventions and ensure sustainability.



Qualitative review workshop in Central Java

Quality Assurance

To ensure the collection of quality data, several quality assurance mechanisms were put in place. These included UI staff inventorying data as it came in, checking that each facility had submitted all three forms, and performing necessary data transformations to appropriately align and format the data. The JSI team conducted data cleaning according to developed protocols and shared findings with UI for follow up.

The requested data changes varied, but were based largely on problems with skip patterns or incorrect data entry. Reminders were provided to UI to send to data collectors regarding the meaning of some questions prompted by issues found during data cleaning, which helped to ensure quality data. Data quality was also achieved through the use of a mobile platform for data collection which enabled the programming of skip patterns and required questions. Mobile data collection also enabled UI and JSI to review the data as they came in, allowing for rapid follow up and increasing the likelihood of collecting quality data.



Pilot data collection with UI data collectors

Challenges and Limitations

This assessment faced some challenges and limitations, including the following:

- A few selected facilities at baseline and endline were not visited due to being unreachable, closure, unknown location, and/or permission to conduct the assessment was not granted. While replacement facilities with similar characteristics were selected, it is important to consider that these inaccessible facilities may have different supply chain performance characteristics due to their remoteness or inaccessibility.
- A complete, accurate facility list was not available at baseline, leading to the misclassification of some facilities. This was rectified to the best of our knowledge for end line, but should be considered when comparing public and private hospitals from baseline to endline.
- The study was designed to be representative of facility types within the program districts. Therefore, the sample is not representative at the provincial or district level. Data disaggregated in this way in the report should be interpreted with caution.
- At baseline, permission to conduct the study was granted later in Jakarta Province than in the other provinces (due to overall project MOUs with Jakarta Province), so data collection in Jakarta Province occurred in November 2015, a few months after the data collection in the other assessed provinces.



Quantitative data collection - endline assessment

Results Framework

The assessment design and overall approach were developed using a project-specific Theory of Change (TOC) model. The TOC model maps the causal pathways required to achieve the end goal of improved product availability; it facilitates development of indicators, assessment tools, and performance monitoring approaches. A list of indicators was developed to measure product availability and overall supply chain performance. The My Choice results tracker represents a subset of this list of indicators.

Target met]	Target not met		Figure 7: My Choice results tracker							
			Service Delivery Point BL (n=341), EL (n=358)			District Warehouse (n=11)			Province Warehouse (n=4)		
Indicator	Product	Baseline	Target	Endline	Baseline	Target	Endline	Baseline	Target	Endline	
	Any Method	45%	30%	32%	55%	0%	37%	75%	0%	25%	
	IUD	15%	10%	6%	0%	0%	0%	0%	0%	0%	
% of facilities with stockouts of BKKBN methods, on the	Implant	23%	16%	21%	0%	0%	9 %	25%	0%	0%	
day of the assessment	Injectable	30%	20%	2%	46%	0%	0%	25%	0%	0%	
	Pill	9%	6%	3%	9%	0%	0%	25%	0%	0%	
	Condom	14%	9 %	١7%	9%	0%	27%	0%	0%	25%	
% of facilities with a stock card for all methods that the facility offers		24%	52%	81%	82%	100%	100%	100%	100%	100%	
% of accurate stocks cards (balance matching physical stock)		34%	45%	64%	55%	73%	66%	55%	73%	37%	
Number of facility staff trained in logistics recordkeeping (with project support)		0	550	652	o	110	110	0	40	40	
	IUD	32%	42%	49%	64%	84%	55%	100%	100%	0%	
% of facilities with appropriate stock levels	Implant	37%	49%	45%	64%	84%	46%	50%	66%	25%	
SDP - 0.5 to 5 months of stock	Injectable	32%	43%	50%	18%	24%	46%	25%	33%	0%	
District Warehouse - 1.5 to 8 months of stock Province Warehouse - 3 to 22 months of stock"	Pill	27%	36%	33%	18%	24%	46%	25%	33%	0%	
	Condom	24%	32%	28%	27%	36%	27%	25%	33%	25%	
Number of facility staff trained (with project support) in using logistics data for inventory management or supply chain performance improvement		0	550	652	0	110	110	0	40	40	
Number of provinces and districts with quality improvement structures developed		N/A	N/A	N/A	0	11	п	0	4	4	

Findings and Recommendations



The findings and recommendations in this report are based on the observations and opinions of the respondents and the assessment team. The assessment focused only on BKKBN-supplied contraceptives flowing through the system and did not assess contraceptives supplied or procured through other sources. Many of the assessment findings were based on information provided by respondents and were therefore affected by the knowledge, opinions, truthfulness, and biases of the respondents. Truthfulness in responses may have also varied by province, as provinces have varying reputations regarding typical views toward studies. Some of the findings (e.g., regarding storage conditions) were based on data collector observations and interpretations and were subject to many of the same concerns. Any findings shown at the province level are not representative of the whole province, but depict the situation in the selected districts in a particular province. These results are representative for the project overall but not representative at the province or district levels. The number of respondents for each quantitative finding is represented by 'n' in each graph and differs based on the applicability of the question for each respondent.



I. Product Availability

A well-known slogan in the public health world is "**No product, no service.**" FP clients should have access to the method of their choice when they need it. This requires a strong and dynamic supply chain system that maintains adequate availability of all contraceptives at service delivery and resupply points at all times.

Contraceptive availability was assessed at province and district warehouses and SDPs by conducting a physical count of the five contraceptive products supplied by BKKBN (see below). For each of these BKKBN products, facilities were asked which methods they are supposed to supply as per their policy. Facilities that offered a method supplied by BKKBN, but that did not have any physical stock of that particular method on the day of the assessment, were considered to be stocked out of that BKKBN method.



As the title of the project suggests, one of the key indicators of a strong FP program is whether SDPs provide the client with a complete cafeteria of method choices. FP adopters have a right to choose a method based on their need and their choices should not be driven by product availability. Significant improvement was observed in the number of facilities that had the full range of methods available in stock on the day of the visit. During the baseline assessment only 55% of all SDPs had all the methods they were supposed to provide in stock, compared to endline where 68% of all SDPs had all methods in stock, an increase of 22%. The most significant improvements were seen in districts in Central Java with Brebes showing the most improvement – 45% in baseline to 96% in endline, and Cilacap achieving 100% availability of all methods. Districts in North Sumatra which performed poorly during baseline have shown improvement in all three districts with availability increasing on average from 22% to 33%. Districts in South Sulawesi were not able to provide a full choice of methods due to large stock outs of condoms which were stocked out at all levels within the province, but there were improvements in availability of products such as IUDs and injectables. Overall, 8 out of 11 districts showed improved performance compared to baseline.

Figure 8: Percentage of SDPs that had all methods they are supposed to offer in stock on the day of the visit by district



At the SDP level, private clinics showed the most improvement with availability increasing from 48% to 69%, while availability at Puskesmas increased from 57% to 60%. Hospitals showed little change with availability decreasing slightly from 64% to 63%.

Although 32% facilities assessed did not have a full range of the five assessed contraceptive methods in stock on the day of the assessment, 99% of SDPs had at least one short term method available, and 96% of all SDPs had at least one long term method available in stock.



Availability for each contraceptive method can be seen in Figure 9. Significant reductions in stock out rates were observed for all methods with the exception of condoms and implants. A 31% decrease was observed in SDPs that were stocked out of any method they offered (45% to 32%). Injectables, a method in high demand, which had a high stockout rate of 30% at baseline, only had 3% of SDPs stocked out at endline. Stock out rates for implants decreased slightly from 24% at baseline to 21% at endline due to delays in central level procurements causing inadequate stock availability at the province and district warehouses. Similarly, condoms experienced high stocks outs due to high incidence of expiry and inadequate procurement by the central level. This resulted in stock out rates of condoms increasing from 13% at baseline to 20% at endline.

Of the 11 district warehouses surveyed, 8 districts had stock of all five methods on the day of the visit while 3 districts in South Sulawesi were stocked out of condoms. A similar trend was seen at the province warehouses with all methods in stock except condoms in South Sulawesi.



Figure 9: Percentage of SDPs stocked out, by method on the day of the assessment

One of the reasons for the high stock out rates at SDPs is lack of appropriate stock levels at district and province warehouses. Warehouses receive product from the higher levels less frequently – province warehouses receive products only once a year while district warehouses typically receive products once a quarter. When warehouses do not maintain adequate stock levels at all times it reduces their ability to respond in a timely manner to meet the needs of the SDPs, which causes stock outs at the facilities.

As can be seen in Figure 10 and 11, there is a correlation between stock levels of contraceptives at the warehouses and availability at the SDP level. Stock out rates are lower at the SDP level when the province and district warehouses have sufficient months of stock. This trend can be seen in both baseline and endline results below.

It can be observed that province warehouses did not maintain adequate levels of stock for any of the five contraceptive products. While IUDs, implants and condoms were significantly understocked, injectables and pills were overstocked. These large levels of excess stock could lead to a significant amount of expired products in the future.

Figure 10: Comparison of warehouse months of stock on hand with SDP stock out rate at baseline



Figure 11: Comparison of warehouse months of stock on hand with SDP stock out rate at endline



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Another critical indicator illustrating the health of a supply chain system is whether SDPs have appropriate stock levels to meet future needs. Figure 12 illustrates whether SDPs were over-stocked as defined by the project (greater than 5 months of stock on hand), appropriately stocked (between 0.5 and 5 months of stock), under-stocked (less than 0.5 months of stock), or stocked out (zero stock). This indicator was calculated using the physical count on the day of the assessment visit and the average monthly consumption (calculated based on consumption reported in the eLMIS by the facility during the three months preceding the visit). Facilities with necessary report data were included in this analysis.

It can be observed in Figure 12 that during baseline most SDPs were either over-stocked or under-stocked/stocked out of BKKBN contraceptives, while only a small percentage are adequately stocked. Across all products, the percentage of SDPs with adequate levels of stock increased significantly from 30% at baseline to 41% at endline. Overstocking continues to be an issue with an average of 45% of SDPs having excess levels of stock. An efficiently run inventory management system can avoid these stock imbalances and ensure that SDPs are resupplied products based on their consumption patterns.



Figure 12: Stock Status at SDPs, by method

Adequately stocked (between 0.5 and 5 months of stock) Overstocked (> 5 months of stock)

No consumption data available

In addition to survey data, the project has also been monitoring eLMIS data. Through the MIM Tool, province and district stakeholders are able to track several key supply chain indicators using monthly stock data being reported into the eLMIS. Additionally, the project has developed an excel based <u>contraceptive availability dashboard</u> that tracks stock status of health facilities across all provinces and districts in Indonesia. The dashboard allows users to compare stock status indicators between groups of provinces or districts.

In Figure 13 below, stock out rates (average of all methods) in My Choice project districts in the four provinces of North Sumatra, Central Java, DKI Jakarta and South Sulawesi are being compared to stock out rates in non intervention districts in the same four provinces. The graph illustrates monthly stock out rates across all methods between baseline (Sep 2015) and endline (March 2018). It can be observed that My Choice intervention districts have outperformed the non intervention districts during this time period. While stock out rates in non intervention districts remained fairly flat (21% at baseline compared to 22% at endline), in the intervention districts it can be observed that stock out rates have declined significantly. From a baseline rate of 28%, stock out rates have decreased to 13%, a percentage decrease of 54%.



Figure 13: Stock out rate at SDPs (average – all methods)



II. Quantification& Procurement

NATIONAL QUANTIFICATION

Until 2017, quantification was done by Central BKKBN and was mostly driven by service targets rather than consumption data. In the baseline, Provinces reported that at the beginning of each year they prepare their annual requirements to submit to BKKBN Central; these too are based on a combination of program targets and plans, active acceptor data, and other data sources. During the baseline qualitative workshops, some provinces and districts expressed that using service targets can result in supply imbalances as insufficient consideration is given to actual consumption of products by clients. Once developed by BKKBN Central, the annual procurement or supply plan is not adjusted in relation to actual consumption during the year. Supplies to the provinces are determined by the Central level, based on annual distribution planning by the Central level. There was no method for calculating and planning for national buffer stock to be stored at the central warehouse: instead it was just whatever remained from the annual procurement.

At the time of baseline the more recent planning guidelines that included a quantification topic was prepared in 2011 (Perka Perencanaan Kebutuhan Kontrasepsi No. 287 tahun 2011) At the end of 2016 BKKBN with support from the MyChoice project developed a Quantification Reference Book, which includes consumption, service and demographic/target based quantification methods. Data availability is one of BKKBN's strengths as it is readily available in the eLMIS and BKKBN and other partners also conduct periodic surveys data.



The reference book was launched in August 2017, during a quantification workshop where the three methods were introduced and the final result from the workshop was the forecasted consumption for 2018 per province. This was the first time BKKBN has considered all data types available, as well as the first time BKKBN has considered a desired maximum stock level and current stock on hand at the central. province, district and SDP for a quantification exercise. The maximum stock is using the lessons learned from JSI's SOPs that were implemented in the four intervention provinces. Unfortunately the impact of this new methodology for quantification can not be seen in the endline results. The endline results reflect the 2017 procurement that was based only on a target based methodology. This procurement led to massive overstocking of injectables and pills. The 2017 quantification using the new methods identified the supply imbalances and to address this injectables and pills were not procured in 2018. Further efforts to address stock imbalances are underway with the reallocating of stock between provinces to ensure all warehouses have no more than the maximum stock level for each contraceptive.

PROCUREMENT

During the baseline none of the four BKKBN provinces in which the project is working were conducting procurement for contraceptives; all contraceptive supplies were received from Central BKKBN. At endline procurement is still largely conducted by central BKKBN except for one case in South Sulawesi where the province procured condoms for the mobile services using their operational funds. This local action was done as a temporary solution due to their huge expired stock and the procurement failure in 2016. The national 2016 condom procurement only received 75% of the total quantity ordered and South Sulawesi was one of the provinces that did not receive their shipment. In addition the 2016 central level quantification for 2017 did not consider the short expiry date of condoms currently in stock and this combined with the 2016 inadequate procurement resulted in a complete stock out of condoms for South Sulawesi in 2018.

Meanwhile, during the baseline several districts (four out of 11) conducted local procurement in anticipation of shortages or limited supply from the Province, or to provide contraceptive choice where the type of product is not available from BKKBN due to their limited range of products. District procurement does not occur regularly, this uses their regional budgets, and depends on the funds available. At baseline the types of items procured locally by districts varied, but where local procurement occurred districts purchased implants and monthly injectables; the injectables that are supplied by Central BKKBN are administered quarterly. Compared to baseline, during the endline, none of our 11 districts had locally procured contraceptives.

Starting in 2018, procurement will be done by provinces, using the quantity decided by the central level from the quantification process from the Quantification Reference Book implementation. The challenge will be the variation of lead time for each province, which will affect the product availability. However this will also be a good opportunity to see if procurement can be improved when under the responsibility of the provinces as it should speed up the procurement process.

Recommendations

Forecasts of contraceptive requirements should be developed using consumption data as a primary source of data, validated with demographic and service data. Supply planning should be based on these forecasts and data from the eLMIS on contraceptives currently in stock and those already ordered. Supply plans should be updated regularly based on actual consumption in comparison to forecasted consumption and current stock levels.

BKKBN has a very good electronic reporting system that captures consumption data and stock on hand at the SDP (F/II/KB report) and stock data at province or district levels (F/V/Gudang report). While starting in 2018 the quantification was conducted using multiple methods as per the recommendations of the project's baseline report and following the Quantification Reference Book, there is concern that from a legal perspective an official guideline is still needed to institutionalize this practice fully. It is recommended that a revision of the Planning/ Quantification Guideline or Perka Perencanaan Kebutuhan Kontrasepsi No. 287 tahun 2011 is made to strengthen the quantification implementation. Now with the Provincial BKKBN office in charge of their own procurement, if they are able to achieve a timely procurement and this is followed with a fixed schedule for distribution from province to district this should result in timely supply down to the lower levels. However it is recommended that provinces are provided technical support to ensure they have the skills and capacity to conduct timely procurement. The performance of provinces should be monitored closely to identify low capacity and provide necessary support.

In addition at central and provincial levels supply plans and distribution plans should be reviewed regularly throughout the year at each level to review actual consumption rates, anticipate changes in consumption and make adjustments to distribution plans. The Central BKKBN should maintain the newly established standardized buffer stock for each product and regularly monitor each province's stock status to provide a fast response to emergency requests.



Province warehouse, DKI Jakarta



III. Inventory Management

Proper inventory management includes an inventory control system that prevents stock imbalances, minimizes expiries, stockouts and overstocks, and maximizes contraceptive availability for clients. A good inventory control system specifies when and how much of each product storekeepers should resupply based on logistics data, and provides guidance on monitoring stock levels and taking action to prevent stock shortages and overstocking.



Taking stock of IUDs

The project has established, through documentation, training and supportive supervision, a forced ordering, max-min inventory control system at the province, district and SDP level, with provinces resupplying districts quarterly and districts resupplying service delivery points every other month. It is a push system where the issuing level calculates the resupply based on reported data. Emergency order and reallocation procedures have been put in place for these same levels. The inventory control system is managed using the Inventory Management and Monitoring (MIM) tool, which helps managers to process data and calculate resupply quantities.

AVAILABILITY OF GUIDELINES/JOB AIDS

Guidelines and job aids are the job support materials that storekeepers who have been trained use when they need to refresh their knowledge on inventory management procedures, use of the MIM tool, and other aspects of proper inventory management. These materials are also useful for orienting new staff who have not been trained, but have been given inventory management responsibilities. As seen in Figure 14, at the time of the endline, almost half of SDPs visited had these materials, up from 3% during the baseline, and most of the province and many of the district warehouses did as well. This represents a significant increase (p < 0.001).

Figure 14: Percent of facilities with available guidelines/job aids by facility type



WHO DETERMINES THE FACILITY'S RESUPPLY QUANTITIES

An important factor in understanding how a supply chain functions is knowing who (i.e., which facility level) primarily determines the quantities of contraceptives to be supplied to a given facility. If the issuing facility determines the resupply quantities, the system is a push system; if the receiving facility determines its own needs, it is a pull system. As stated above the system implemented through the MyChoice Project is a push system.

Findings at baseline showed a mix of push and pull systems being used to determine the resupply for facilities, and by endline there was a significant increase, 61% to 76% (p < 0.001), in facilities reporting that the higher level determines their resupply (push system).

"Inventory Management and Monitoring Tool (MIM Tool) allows me to control my stock as well as stock at the health facility. The Emergency order point and Reallocation point mechanism helps us to maintain adequate stock at the health facility." WAREHOUSE STAFF, CILICAP DISTRICT, CENTRAL JAVA Figure 15 shows that the increase in the use of the push system implemented by MyChoice was consistent across facility type however the most significant difference is seen with puskemas and private facilities, from 66% to 78% (p = 0.01) and from 48% to 71% (p=0.007), respectively.

Figure 15: Percentage of facilities reporting the higher level determines the quantities of contraceptives to be supplied by facility type



Across provinces the biggest change was seen in North Sumatra which at baseline reported that pull was used more than push. (Figure 16).

Figure 16: Percentage of facilities reporting the higher level determines the quantities of contraceptives to be supplied by province


HOW FACILITIES DETERMINE RESUPPLY QUANTITIES FOR LOWER LEVELS

The MIM tool was introduced for use by Province and District managers to calculate the quantities of contraceptives that should be resupplied to lower level facilities. At the time of baseline, the provinces and districts were calculating the resupply either using a formula, by estimating based on quantities dispensed or issued, or based on a target number of clients that were to be reached for contraception. As seen in Figure 17, the majority of provinces and districts are now relying on the MIM tool to make the determination of resupply quantity. During the qualitative workshops, participants noted that the use of the MIM tool has improved their ability to resupply and deliver the appropriate quantities of products. Managers in Brebes in Central Java credit the MIM tool and adherence to the SOPs as one of the main reasons for the significant improvement in their supply chain performance. However qualitative workshops respondents from South Sulawesi and North Sumatra admitted that they do not always use the quantities calculated by the MIM tool. When asked why they responded that they fear oversupplying facilities, however as a result these facilities sometimes end up stocking out.

"We are now looking at all of the data! Especially consumption of data, it shows the real need. Inventory Management & Monitoring Tool (MIM Tool) helps us to make easy and fast analysis and calculate correct resupply quantities."

FINANCE AND ASSET MANAGEMENT DIVISION, BKKBN PROVINCE, CENTRAL JAVA



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CHALLENGES WITH OBTAINING CONTRACEPTIVES

During the endline assessment, 52% of facilities at all levels reported challenges in obtaining contraceptives compared to 21% at baseline. Among those reporting having challenges, all categories of service delivery facilities and warehouses showed an increase in the percent of facilities experiencing challenges with obtaining contraceptives. (Figure 18) While there was a slight decrease in the percent of facilities experiencing challenges in Central Java, findings for the other three provinces indicate a significant increase between baseline and endline.

Figure 18: Percentage of facilities that experienced challenges with obtaining contraceptives by facility type



The most common challenge cited by respondents for all types of facilities at baseline and endline was stock outs of products at the higher level facility (Figure 19). At endline 3 of the 4 provincial warehouses also reported uncertain distribution schedule and 2 reported not receiving what they needed as challenge for them to obtain contraceptives. At district and SDP level very few facilities reported these as challenges. Distribution to provinces is made based on central BKKBN procurement arrangements with suppliers and is currently not following a specific supply planning or inventory management process.

Figure 19: Reasons cited at endline for challenges in obtaining contraceptives



During the qualitative workshops, specifically in Central Java, the province explained that it is difficult to ensure adequate supplies to the three My Choice districts, while there are 32 other districts requesting supplies that are not using consumption data for their requests. Respondents believe that as all districts come on board with the new system that this situation will be resolved or easier to manage. Central Java district respondents also cited a lack of manpower to process orders for the large number of service delivery facilities as a constraint - this may have affected the number seen in the quantitative analysis.

EMERGENCY ORDERS

At baseline 64% of facilities reported they had procedures on when to place emergency orders, by endline this had increased to 96%. The establishment of emergency order procedures was a key component to the package implemented as part of the MyChoice Project. As seen in Figure 20, increases in the number of facilities with procedures increased significantly across all types of facilities.

Figure 20: Percent of facilities who had a way to place emergency orders and had emergency order procedures



Emergency order procedures specify at what stock level an emergency order should be placed to allow for resupply before the facility stocks out. At endline 93% of facilities reported having a stock level to trigger an emergency order compared to 61% at baseline. The emergency order levels for facilities implemented by the project were set at 2 weeks of stock. At the time of the baseline, the majority of facilities (71%) reported placing emergency orders when they had one week of stock. At endline this figure had fallen to 26%, while 42% of facilities reported placing an emergency order at two weeks of stock, in line with the new procedures. (see Figure 21).

Figure 21: Stock level at which facilities with emergency order procedures place an emergency order



A comparison between baseline and endline of the number of emergency orders reported to have been placed by facilities who have a way of placing emergency orders shows a general decline in the last 6 months, as seen in Figure 22.



Figure 22: Number of emergency orders that have been placed in the past 6 months

At the time of baseline only 11% of facilities reported having a way to place an emergency order; there has been a significant increase at endline across all categories of facilities to 75% overall (p < 0.001). (Figure 23) All provinces showed a significant increase in the percent of facilities with a way of placing emergency orders, with Central Java having 95% of facilities, South Sulawesi with 84%, and North Sumatra with 72%. Jakarta had 53% of facilities indicating that they have a way to place an emergency order; Jakarta was the last province to begin using these procedures which may explain the lower percentage that will likely increase over time.

As seen in Figure 24, most facilities place an emergency order through a letter or phone call/message rather than using an emergency order form. It appears that facilities in Central Java are more likely to do so through a phone call or message, while the other three provinces tend to do so by letter. The use of WhatsApp cited by several districts in qualitative interviews has improved transfer of information and coordination of supplies.

Figure 23: Percentage of facilities with a way to place emergency orders by facility type



Figure 24: How emergency orders are submitted to the higher level by province



Recommendations

My Choice recommends that the inventory management procedures established be reinforced in training and supportive supervision in current provinces and in those provinces where they are being scaled. Supervisors should ensure that all staff managing products have the appropriate guides and job aids to refer to in undertaking their inventory management tasks. Participants in the qualitative workshops also noted that strict adherence to the procedures as documented in the SOP, consistent use of the MIM tool calculated quantities, and improved data quality would increase the effectiveness of inventory management. Additionally, it is recommended that a web based Inventory Management & Monitoring (MIM) tool be implemented at province and district level in order to enforce a standardized min max inventory control system which will reduce stock imbalances at district warehouses and SDPs.

Districts which are not yet using these inventory management procedures strain the availability of supply at the province, and the irregularity of the procedures they use to obtain contraceptives makes it difficult for the provinces to manage their workload. The sooner that the inventory management system is scaled to all districts in the province, the more efficient the system can become. In some districts, limited manpower issues remain a constraint for processing service delivery facility orders. It is recommended that these districts find means to add additional manpower for inventory management.

It is recommended that resupply at each level be driven by consumption and not service targets. A well-implemented inventory control system can ensure that stock levels are adequate to foresee any increases or decreases in demand.

Product availability at the warehouses is hampered by an inadequate inventory control mechanism at the central level. It is recommended that the central level develop a system to monitor stock levels and manage their procurement process and supply planning based on the needs of the lower levels.

At the central level, an appropriate redistribution system is much needed to ensure that provinces that need more product are receiving it and those that are overstocked do not run the risk of their products expiring.



IV. Distribution

DISTRIBUTION PROCEDURES

In order to ensure the continuous supply of quality contraceptives, supply managers must not only implement an effective inventory control system, but also establish and run an efficient and consistent distribution system that is well documented and understood by those expecting deliveries, i.e. the facilities. As a result of the MyChoice intervention overall there was a significant increase in facilities that indicated that they have a distribution timeline between baseline and endline, 51% compared to 58% (p = 0.042). However, when looking at province level results vary; Central Java improved significantly while Jakarta had a decrease in the percentage of facilities. (Figure 25)



Figure 25: Facilities with distribution timeline by province Under the MyChoice Project, the distribution system established in line with the inventory management system provides instructions for when deliveries should be made from the higher level issuing facilities to the lower level receiving facilities. Facilities receive delivery of contraceptives every second month with half of the facilities receive delivery one month and the other half the next month. By design, districts receive delivery of contraceptives from the province every 3 months. Deliveries are made in the last week of the month. Provinces receive delivery directly from suppliers with no specific schedule established, though shipments of individual products are usually made once a year to the province.

Figure 26: How often facilities and district warehouses report they are supposed to receive contraceptives



Figure 26 demonstrates that the majority of facilities have understood that the procedures changed from every month to every second month (blue bars), however almost a third continue to expect deliveries every quarter. For district warehouses there was also an increase in the number of warehouses respondents who understood the correct procedures and expected quarterly deliveries (blue bars).

DISTRIBUTION TIMELINE

In line with the findings on understanding of distribution procedures there was also a shift between baseline and endline on when the majority of facilities received their deliveries in line with the changing procedures. District participants in the qualitative workshops noted as a lesson learned that the staggered distribution schedule for resupplying service delivery facilities has proven to reduce their workload on a routine basis, and that in general their distribution schedule has improved.



Distribution vehicle in Cilacap, Central Java

At baseline the majority of SDPs reported receiving supplies every month (39%) or every three months (35%). By endline SDPs reported receiving deliveries every two months (38%) or every three months (38%). These results show a shift towards the new procedures but highlight a need for more effort to establish a consistent, routine distribution system. (Figure 27).



Figure 27: How often SDPs actually receive contraceptives

When looking across the different facility types the greatest increase in facilities receiving supplies every two months as per the distribution schedule is seen among the puskesmas, with an increase from 9% to 42% (Figure 28).

Figure 28: Facilities reporting they receive contraceptives every two months by facility type



Of those facilities that reported they have a distribution timeline for contraceptives (58%), the majority of facilities, (SDPs and district warehouses) at baseline and endline reported they generally receive their products on time (Figure 29).

Figure 29: Facilities reporting how often supplies arrive on time



However, there was a marked increase in the percent of facilities that receive their products always on time in Central Java from baseline to endline, while the other three provinces saw an decrease in percent of facilities receiving on time at endline, as seen in Figure 30.



Figure 30: Facilities reporting supplies always arrive on time by province

The highest percent of facilities who are informed that they will be receiving products was also found in Central Java at 90% of facilities. Service delivery facilities were also more likely than warehouses to be notified that they are receiving products. (Figure 31)

Figure 31: Facilities at endline that have been informed by higher level that they will be receiving product by facility type



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During the qualitative workshops in South Sulawesi, participants acknowledged that the inventory management system works best when the distribution timeline is adhered to as documented in the SOP; they noted that they often push the dates of their deliveries beyond the documented schedule. In North Sumatra, problems of limited transportation have been recently solved which should improve their on time delivery performance. Lack of transportation and limited manpower were cited as obstacles in two districts in Central Java, as well as in East Jakarta. Analysis of stock outs as compared to delivery frequency as seen in the figure below indicates that stock out rates generally decrease when products are delivered per the distribution timeline, however the only significant difference was seen in stock outs of two-rod implants.

Figure 32: % of SDPs stocked out compared to if deliveries were according to agreed schedule (every two months)



Recommendations

A well implemented inventory management system requires a fixed distribution schedule to be followed, without which the system cannot work as designed. The endline assessment indicated that when the bi-monthly schedule was adhered to facilities experienced lower stock out rates. As participants in the qualitative workshops explained, distribution needs to be at the right time and in the right quantity. Consistent with the recommendations in the inventory management section above, adherence to the distribution procedures as designed and documented in the SOPs should be reinforced during training and supportive supervision to allow the systems to operate at its optimal efficiency. Where there are transport and human resource constraints, these should be addressed by province and district management early on in the scale up of the system so that early successes in implementation can be appreciated.

It is recommended that all resupply points adhere to a routine distribution schedule and ensure timely resupply. The staggered schedule using route optimization techniques to design routes is recommended to help reduce the workload on distribution managers and optimize distribution costs. Lastly, it is recommended that BKKBN appropriately socialize guidance on the use of special allocation funds available to districts for commodity transport and distribution needs and ensure that the funds are accessible and expended for their intended use.



V. Logistics Management Information System

LMIS REPORTS AND RECORDS

A strong supply chain requires good data visibility, based on routinely and accurately updated records and timely reporting, so that managers and supervisors throughout the system can make informed decisions. Improving the quality of data and increasing routine use of data for decision making was central to the My Choice project intervention.

At baseline logistics reporting was very good across all provinces and districts; data collectors observed 100% reporting for the past three months in all warehouses and this reporting rate was maintained at endline. For SDPs at baseline 79% were able to produce reports for the previous three months; this increased slightly to 81% at endline. Endline results also showed fewer SDPS with less than 3 reports at endline: 21% at baseline compared to 19% at endline.

Figure 33: Number of reports available at SDPs from the last three months



The first step to accurate reporting is that staff use their records to complete their reports. At baseline most warehouses reported using stock cards or stock ledgers to complete their reports. However at SDP level at baseline only 15% of SDPs referred to stock cards for reporting; by endline more than 90% of SDPs were using stock cards.

Figure 34: Form facilities refer to when completing **BKKBN** reports



The number of SDPs with stock cards that had been recently updated with balance information increased significantly between baseline and endline, from 24% to 80%. The use of stock cards in district and provincial warehouses at baseline was high and the change at endline was less significant.



Figure 35: Percentage of facilities that had stock cards with balance information available for all BKKBN products they offered

STOCK RECORDS

Keeping accurate stock records leads to accurate reporting. To assess accuracy of stock records in facilities with stock cards, data collectors compared the recorded balance information with the actual physical count as a measure of stock card accuracy. At baseline overall accuracy of stock cards was low with only 34% of stock cards observed in SDPs having a balance that matched the actual physical count, and 55% in district and province warehouses. By endline accuracy had almost doubled in SDPs with 61% of the recorded stock card balances matching actual physical count, however accuracy in warehouses had reduced slightly to 32% of province warehouses and 49% of district warehouses.

Figure 36: Percentage of stock cards with balance matching physical stock



To understand the impact of stocks cards on the supply chain, the stock out rates were compared between SDPs that had stocks cards for all methods and SDPs that were not consistently using stock cards for all methods. The results show a consistent trend that SDPs that use stock cards have significantly lower stock out rates as compared to those facilities that do not use stock cards.

Figure 37: Percentage stock outs if stock cards were being used or not used by facility by method



The same kind of trend can be seen when comparing stock out rates with accuracy of the stock card, i.e. where the balance on the stock card matched the physical count.



Figure 38: Percentage stock outs if stock cards were accurate or not by facility by method

DATA USE

Improving the use of supply chain data was a central theme for the My Choice project's interventions. Between baseline and endline the percentage of facilities that indicated using logistics data increased significantly from 63% to 83% (p < 0.001). The greatest increase in the use of data was seen across all types of SDPs as seen in Figure 39.

Figure 39: Percentage of SDPs that use logistics data



Data collectors asked how respondents across all SDPs and warehouses access the logistics data that they use. At baseline 60% of district warehouses and 75% of provincial warehouses said they used the eLMIS, this increased to 82% and 100% respectively at endline. At baseline only 40% of district warehouses and 25% of provincial warehouses said they access data from lower level facility paper reports and this increased to 100% of provincial and district warehouses at endline. See figure 40.



At the SDP level how staff access data did not change from baseline to endline. The majority of respondents reported using facility records (80% at baseline compared to 87% at endline). Others reported using paper reports from the lower levels (45% at baseline to 46% at endline). Very few SDPs reported using the eLMIS as a data source (2% at baseline and 3% at endline).

The project focused on having data used in daily decisions related to resupply and distribution of products, and also for longer term performance monitoring. Results show an increase in the monitoring of key supply chain indicators especially for preventing stock outs through emergency orders.

Figure 41: How facilities use logistics data for decision-making



TRAINING IN RECORDING AND REPORTING

Training ensures that staff members are equipped with necessary skills to do their jobs. Baseline findings indicated that there were gaps in training for all key logistics forms across facility levels, with the biggest gap in training in logistics recording forms.

At baseline 30% of respondents reported they had been trained in logistics recording and reporting; at endline this remained constant for trainings not conducted by My Choice. However, at endline over 90% reported being trained in logistics records and reports by through the project activities.

"Health facilities historically did not really care about accurate records. The Mentorship and On-the-job training program has provided mechanism for us to inform facilities about the importance of maintaining accurate records. Now health facilities are consistently conducting physical stock count at the end of each month."

HEAD OF FP PROGRAM & FINANCE DIVISION, BREBES DISTRICT, CENTRAL JAVA At baseline less than 75% of facilities across all levels reported that they have at least one staff member trained in completing an F2 form (for SDPs) and an F5 form (for warehouses); by endline this was above 90% across all levels. The increase in training was most significant at the SDP level, where at baseline 48% reported having at least one person trained compared to 83% at endline.



Figure 42: Percentage of facilities with at least one staff trained in F2/F5 forms

At baseline only 18% of SDPs had at least one staff trained in completing stock cards. By endline this number had increase to 98%. 68% of respondents from all facilities across all levels had watched the stock management video job aid.



Figure 43: Percentage of facilities with at least one staff trained in completion of stock cards

Qualitative discussions credit the improvement in recording and reporting to strengthening supportive supervision that includes on the job training at the health facility. As well it was discussed that the inventory management training for health facility staff emphasized the importance of the stock card resulting in increased utilization of stock cards to record logistics transactions. Repeated mentorship visits using a structured mentorship approach proved to be an effective way to improve the accuracy of stock records and reports. Figure 44 shows data collected through mentorship which demonstrate how skills improved after each visit.

Figure 44: Results from routine mentor visits on stock card use and accuracy (monitoring data)



Recommendations

Results show that the quality and use of data improved in My Choice districts from baseline to endline. The project had particular impact on the increased use of stock cards, a simple yet critical foundation to good stock management. Through trainings, mentorship and job aids the team worked with Provincial and District BKKBN staff to build skills while increasing recognition for the importance of data and monitoring of the supply chain.

To improve data quality and use, it is recommended that provinces support districts to train and mentor staff in the use of stock cards and the importance of using this data for reporting and making resupply decisions. In addition to training, it is essential that there is adequate funding to print stock cards. This could be done using existing line items for stationery. Through training on the MIM tool and through QITs, staff can continue to use and value data to improve their daily supply chain practices. In turn this increased use of data will result in a greater appreciation of data and why data quality is so critical. Lastly, it is recommended that warehouse management information systems be digitized to create efficiencies and improve reporting rates and data quality. The current practice includes manual data entry into multiple registers that is time consuming and duplicative.

VI. Storage

Standards for appropriate storage conditions should be met to ensure that contraceptives maintain their quality and effectiveness. In assessing the storage situation, a list of key storage conditions was identified and data collectors observed whether or not these conditions were individually met.

Data collectors observed and recorded 14 different storage conditions and in order to achieve 70% of key storage conditions, facilities had to meet at least 10 key conditions out of 14 or, if the facilities have large stacked boxes, they had to meet at least 12 of 17.



Jakarta Province Warehouse

Storage conditions at baseline were generally good, above 80% and by endline there were still more improvements with more than 90% of facilities and warehouses meeting at least 70% of the key storage conditions; (Figure 45).

Figure 45: Percent of facilities that met 70% of key storage conditions



The biggest improvement in storage conditions was seen in South Sulawesi with an increase from 56% of facilities at baseline to 92% of facilities meeting 70% of the key storage conditions.

Figure 46: Percent of facilities that met 70% of key storage conditions by province



Figure 47: Percent of facilities that met each of the 14 key storage conditions

The biggest improvement seen in storage conditions at facilities was adherence to First to Expire, First Out procedures. At baseline, only 57% of facilities were practicing FEFO. At endline, 80% of facilities reported practicing FEFO – an increase of more than 40%. This increased practice of FEFO is likely due to training, mentoring and storage posters provided by the project.





Endline (N=373) Baseline (N=356)

TEMPERATURE CONTROL MECHANISMS

Storing contraceptives at the correct temperature is critical to maintaining their quality and effectiveness. To measure this the project considered a number of factors: does the facility have a temperature monitoring device, are there temperature control mechanisms such as functioning air conditioning, fans, or passive ventilation through windows, and on the day of the survey was the temperature appropriate according to product guidelines.

Results showed the percent of facilities with a temperature monitoring device increased from 11% to 42% (p < 0.001) between baseline and endline. Observations on the existence of a temperature control mechanism and an appropriate temperature on the day of visit showed an increase from 10% to 50% for all SDPs; as seen in Figure 48, all facility types improved in this indicator.



Figure 48: Percent of facilities with a functioning temperature control mechanism in place and appropriate storage temperature by facility type



Improvements in availability of functioning temperature control was also seen across all provinces with the most significant improvements seen in Central Java.

71% 55% 31% 22% 14% 11% 3% 2% BL (n=81) EL (n=104) BL (n=102) EL (n=93) BL (n=98) EL (n=99) BL (n=75) EL (n=77) Central Java Jakarta North Sumatra South Sulawesi

Figure 49: Percent of facilities with a functioning temp control mechanism in place and appropriate storage temperature by province

TRAINING IN STORAGE

To maintain storage standards, it is critical that staff be trained in appropriate storage procedures. At baseline only 24% of survey respondents said they had been trained in storage procedures which increased significantly to 92% at endline (p < 0.001). Breaking this down, while at baseline 90% of warehouse respondents had been trained in storage procedures, at the SDP level only 21% reported being trained in storage procedures. By endline 92% of all SDP staff reported being trained in storage procedures. Qualitative findings highlighted the importance of monitoring visits to improve storage conditions. Monitoring visits assist staff to implement what they learn in training.

21% BL (n=341) EL (n=358) BL (n=11) EL (n=11) BL (n=4) EL (n=4) SDPs District Warehouse Provincial Warehouse

In addition to mentorship and training the project provided storage posters to be displayed in the storage area.

Figure 49: Percent of facilities at endline with storage poster available by province



Figure 48: Percent of staff trained in storage procedures by facility type

Recommendations

While generally storage conditions are good qualitative discussions revealed there was still work to be done, especially in terms of temperature control. The qualitative discussions revealed that some warehouses monitor and record temperatures morning and night when the temperature is lowest, and therefore do not record midday temperatures which are potentially the highest temperatures to which contraceptives are exposed. Others had inappropriate devices for monitoring temperature and some required support to improve storage conditions through provision of new storage cabinets and fixing or replacing broken air conditioners. More resources and attention need to be directed to improving storage conditions.

It is recommended that training and mentorship ensure storage best practices are implemented such as First to Expire, First Out, and correct temperature monitoring. The project developed posters to provide guidance on best storage practices at warehouses and health facilities. It is recommended that this resource be widely disseminated to provide users with the appropriate knowledge on storage. Lastly, it is recommended that adequate resources be made available to improve storage infrastructure to enable facilities to appropriately store adequate levels of stock.



Storage Poster for Warehouses



VII. Monitoring and Supervision

To manage supply chain activities, staff need to have a clear understanding of their roles and responsibilities as well as the knowledge, skills and tools to perform their duties. Underpinning this is the desire or motivation to consistently perform their duties.

Qualitative findings from the LSAT at baseline showed that issues related to organization and staffing revolved around a lack of human resources due to high staff turnover, insufficient supply chain training opportunities, an absence of specific and relevant guidelines or tool at all levels, and little coordination and communication between levels, especially between district and facility levels.

Motivation and incentives were also discussed at baseline, but were not specified as a barrier to fulfilling work duties. District staff and provincial staff generally felt motivated by their desire to fulfill their job responsibilities or help the community. Some said they were motivated by being extended opportunities, like further training. Few mentioned monetary incentives as their primary motivation. Project interventions to address these issues included monitoring and supervision visits, quality improvement teams and other tools to support staff in doing their tasks such as video job aids and WhatsApp groups. Each of the project interventions had an effect on the performance of the provincial, district and service organizations managing the supply chain, and on the performance of individuals working within these units. As heard in the qualitative data collection, standardization of inventory, recording and reporting procedures, and training in the same, gave staff the confidence, knowledge and structure needed to understand what was expected of them and and the skills to do the job. Supportive supervision motivates staff and improves performance, while the quality improvement teams facilitate communication and coordination between levels and collaborative problem-solving.



Supportive supervision visit at a health facility in Gowa district, South Sulawesi

SUPERVISION

Conducting regular supportive supervision of logistics practices (using standardized checklists and providing timely feedback to supervised personnel) is an important way to reinforce training, promote adherence to logistics system procedures, and increase worker motivation.

At baseline, only 57% of SDPs had received supervision that included family planning or supply chain management. At end line, approximately 86% of SDPs had received supervision - an increase of almost 30-percentage points from baseline to end line, as shown in Figure 50. There was a slight decrease in reported supervision at district warehouses (100% to 91%).

Those who conducted supervision visits shifted from baseline to endline. At baseline those who conduct FP supply chain supervision visits to SDP level varied greatly among facilities regardless of type. By endline the majority of SDPs reported that District BKKBN were conducting supervision visits (86% of hospitals (private or public); 68% of private clinics; and 73% of pukesmases).

Figure 50: Percent of facilities that received supervision (family planning or supply chain management of contraceptives)



Figure 51: Who conducted your last supervision visit



It is important to note, however, that this question at baseline was multiple response whereas at end line it was a single response question. This may lead to conflated answers at baseline, making it difficult to draw true comparisons between baseline and endline.

At end line, respondents were asked further details about the supervision they have received, specifically about the occurrence of on-the-job training and feedback at last supervision which were key interventions by the project. As Figure 53 shows, on-the-job training was reported by the vast majority of facilities and warehouses, written feedback at last supervision is happening slightly less frequently than on-the-job training, but is being reported by most SDPs and district warehouses.

When asked if training and feedback were useful virtually all facilities and warehouses found these trainings and feedback useful during supervision visits, see Figure 52.

Figure 52: Facilities at endline that found training and feedback useful by facility type



Figure 53: Facilities that received on the job training and written feedback at last supervision by facility type





On the job training during a supportive supervision visits in Cilacap, Central Java,

QUALITY IMPROVEMENT TEAMS (QITS)

QITs were implemented at provincial and district levels. The purpose of the QITs was to improve the use of logistics data for supply chain decision making, such as better forecasting and quantification, monitoring and performance management, as a routine practice. QITs have a common goal and a shared responsibility to review data, identify problems and work together to find solutions.

QITs were designed to meet every month at province and district level, however due to competing activities it was found that this was difficult to maintain even with project support. On average district level QITs met 61% of the time and province staff met 18% of time. At district level the frequency of QIT meetings increased from 39% to 82% after the midline assessment when the project promoted the importance of these meetings. However this improvement was not seen at the provincial level where frequency of meetings was at 21% before midline and 18% after.

Figure 54 shows how the frequency of District QITs meetings has fluctuated over the project timeline. DKI Jakarta only implemented QITs in August 2017 and between August and February meetings were held 6 out of the 7 months.



Figure 54: Percentage of District QIT expected meetings that occurred across provinces

The qualitative data highlighted some of the successes achieved by the QITs as a result of reviewing the data and local problem solving. It was during a QIT team meeting that it was discovered that several SDP's had expired stock and were including it in their report as available balance. As a result the resupply quantity calculated by the MIM tool was low as it appeared the facility had more stock than they actually had. The QIT quickly took actions to dispose of the expired products and provide supervision to facilities to report correctly. Many QITs also used the meetings to review stock levels across SDP's and identify facilities with overstocking above the reallocation point, and determine which nearby facilities are understocked and reallocate stock to reduce the risk of stock outs and wastage.

Qualitative discussions also highlighted that QITs increased the capacity of stakeholders to analyze and interpret data using the inventory management tools. Provinces increased their budget for SCM related activities as a result of QITs and project results and there is enhanced value for family planning SC across divisions.

WHATSAPP GROUPS

MyChoice facilitated the implementation of WhatsApp groups to foster communication and strengthen the relationship between users at each level; these groups complement other supply chain strengthening interventions. Staff used the platform to send reports, stock cards, policy update letters and paperwork via photo. By endline almost 60% of SDP respondents, 82% of districts and 100% of provincial were part of a WhatsApp group. Engagement varied greatly by region. The WhatsApp groups were particularly embraced in Central Java where more than 90% of facilities reported they were part of the Whatsapp group, compared to Jakarta where only 7% of facilities use a WhatsApp group.

Figure 55: Percent of facilities at endline that are part of WhatsApp group by facility type



Qualitative results reveal that in Brebes, the WhatsApp forum is used for inventory management. When others were asked about what information is sent via WhatsApp, majority of respondents reported they send information on stock status updates, emergency orders and stock status information. However many facilities (40%) reported they do not send messages and only read messages (Figure 57).

Figure 56: Types of information received on the WhatsApp group at endline (n=219)



Respondents were also asked about the type of information they receive; responses included reminders, feedback, information on EOP and reallocation point. Fewer than 7% of respondents reported receiving video tutorials via WhatsApp (Figure 56).

Figure 57: Types of information sent to the WhatsApp group at endline (n=219)



Recommendations

During qualitative interviews, provincial and district staff recognized the significant role of supportive supervision and on-the-job training activities in improving accuracy of recording and reporting and adherence to both inventory management and storage procedures. They pointed out the importance of not only the performance management aspect of supportive supervision, but also its effect on improving communication and coordination between levels.

On improving staff motivation and morale, on-the-job training and classroom training were also credited for contributing to improvements, while WhatsApp groups provide a useful mechanism for quick feedback and answers to questions and requests for emergency orders. Staff noted challenges to conducting supportive supervision, which include many competing activities and lack of budget for visits. They also discussed that the frequency of supportive supervision is not as important as the quality of the visit which should include joint problem solving, on-the-job training, and use of the feedback form.

Based on the data and discussions presented, the project recommends that going forward that:

- · Routine supportive supervision visits be planned and budgeted for at all levels
- Supportive supervision visits may be combined with other activities to make them more feasible, yet should be given sufficient time to ensure their quality and allow for on-the-job training as needed
- Quality improvement teams meet routinely at province and district levels to review eLMIS data, make resupply decisions and ensure good coordination across the different divisions
- WhatsApp groups be established and their use encouraged to improve communication and promote facility-district and district-province connections
- BKKBN identify key supply chain indicators and develop a dashboard tool for users at all levels to facilitate data visibility and use for decision making to support continuous supply chain improvement.



Conclusion and the Way Forward

Conclusion

Many recommendations exist throughout this report, driven by qualitative and quantitative endline assessment findings. After the baseline assessment the My Choice team collaborated with stakeholders to design a comprehensive package of data centric supply chain interventions that address critical gaps in the system. The intervention package had four key interventions that were guided by three core themes - strengthening organizational capacity, fostering collaboration and accountability, and inculcating a culture of data use for continuous supply chain improvement. This intervention package used a systems approach to strengthen the supply chain workforce at each level, empowering them with new tools, skills and information that enable holistic and continuous supply chain improvement.

These intervention areas have proven to improve key supply chain practices by improving data quality, improving the use of data for decision making and strengthening the coordination and communication across levels and divisions of the supply chain. Most importantly the results of the implementation have shown the importance of investing and strengthening the supply chain so that the service delivery points have a standardized, efficient and effective way of getting the products they need.



Over the course of the implementation we learned that those FP divisions and health facilities that implemented the interventions routinely had stronger supply chain outcomes. It will be important for each province, district and SDP to build on the successes and lessons learned from the implementation and ensure these supply chain system strengthening initiatives are institutionalized and part of their daily operations.

The way forward

Moving forward My Choice will provide technical assistance to central, provincial and district levels to maintain these activities in the original 11 districts and scale up these interventions in other districts. In the next phase of the project, My Choice will use the successes and lessons learned from the implementation in 11 districts, to reach a wider audience of stakeholders. The project's technical assistance will focus on the below areas

Supply Chain Policy: Building on the work that has already been done, the project will continue to support BKKBN on the review and revision as well as development of various family planning supply chain guidelines including those related to quantification, distribution planning, contraceptive management at all levels and supply chain monitoring.

Training design: To ensure new policies are appropriately disseminated and complied with requires a comprehensive investment in training and monitoring. The project will support the development of SOPs and Job aids that will assist users to implement the new policies. In addition, support for curriculum development and capacity building of trainers will facilitate smooth roll out of the guidelines.

Inventory Management & Supply Chain Monitoring : An effective inventory control system requires all stakeholders to be implementing the system in a uniform manner. The MIM Tool standardizes how resupply is calculated and also tracks several supply chain performance indicators. To support scale up to a larger number of regions, the project will develop a web based MIM Tool that can be used by any province or district in Indonesia. Additionally, it will facilitate easy supply chain performance monitoring at any level of the system.

Warehouse Management Digitization: During implementation in the first phase of the project, it was observed that warehouse management practices were not optimal. Warehouse managers are required to fill multiple registers manually, leading to duplication and risk of data entry errors. The project emphasizes data quality in all its interventions and believes this to be a significant gap. Digitization of warehouse management processes will reduce the burden on users as well as strengthen reporting rates and data quality. Leveraging the high smart phone penetration in Indonesia, the project will develop and pilot a warehouse management app that will facilitate easy reception, storage and distribution of contraceptives.

Supply Chain Advocacy: Strong supply chain practices can only be built and sustained through a continuous investment in supply chain systems. Financial investment and commitment from stakeholders at all levels is necessary to ensure that the people of Indonesia have access to a full choice of contraceptive methods at all times. The project will continue to advocate for improved supply chain practices at various forums.





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Resources

The Logistics System Assessment Tool (LSAT) and the Logistics Indicators Assessment Tool (LIAT) provide standardized methodologies for assessing logistics systems qualitatively and quantitatively, respectively.

For more information refer to the <u>Guide to</u> <u>Conducting Supply Chain Assessments Using the</u> <u>LSAT and LIAT</u>

Standard versions of these tools can be found here:



LMIS data: logistik.bkkbn.go.id http://aplikasi.bkkbn.go.id/sr/Klinik/ Laporan2013/Bulanan/Faskes2013Tabel11.aspx





Data Collection: https://www.surveycto.com/








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