Enhancing Family Planning Market Knowledge

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USAID | DELIVER PROJECT, Task Order 4

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Abstract

In December 2014, Zambia's Ministry of Community Development, Mother and Child Health, with technical assistance from the USAID | DELIVER PROJECT, conducted a national family planning quantification exercise. The total market data resulting from the collaboration between IMS Health, Medicines for Malaria Venture, Zambia Medicines Regulatory Authority, and the Ministry of Health was reviewed and applied to the quantification exercise. This report includes the data sources, key features, and limitations of the market data; results of the data review; and description of how the data was used to inform the quantification exercise.

Contents

Acronyms

AMC	average monthly consumption
COC	combined oral contraceptive pill
CPR	contraceptive prevalence rate
CYP	couple-years of protection
DHO	district health office
DHS	Demographic and Health Surveys
EC	emergency contraceptive
EMLIP	Essential Medicines Logistics Improvement Program
FDA	U.S. Food and Drug Administration
HMIS	health management information system
IUD	intrauterine device
LMIS	logistics management information system
MCDMCH	Ministry of Community Development, Mother and Child Health
MMV	Medicines for Malaria Venture
MOH	Ministry of Health
MSL	Medical Stores Limited
MSZ	Marie Stopes of Zambia
NGO	nongovernmental organization
POP	progestin-only contraceptive pill
PPAZ	Planned Parenthood Association of Zambia
PRA	Pharmaceutical Regulatory Authority
RHSC	Reproductive Health Supply Coordinator
SDP	service delivery point
SFH	Society for Family Health
TO	task order
USAID	U.S. Agency for International Development
WHO	World Health Organization
WRA	women of reproductive age
ZAMRA	Zambia Medicines Regulatory Authority

ZHECT   Zambia Health Education and Communications Trust

Acknowledgments

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Executive Summary

Activity Purpose and Objectives

In this report, total market data in the public health arena is defined as the consumption/sales data of health products from each market sector or channel, measured for a specific time period, in a particular geographic region. For this activity, in December 2014, the USAID | DELIVER PROJECT applied total market data obtained from IMS Health, through joint effort with USAID/Washington, to inform Zambia's national quantification exercise for family planning products. The total market data resulted from the collaboration between IMS Health, Medicines for Malaria Venture (MMV), Zambia Medicines Regulatory Authority (ZAMRA), and the Ministry of Health (MOH).

The activity had the following objectives:

- Review the current IMS-MMV-ZAMRA total market data—e.g., assess the key features and limitations of the data—as it relates to this national quantification exercise.

- Apply the data to the quantification exercise—e.g., estimate each sector's share of the total market for each family planning method/product.

- Consider the potential use of similar total market data for future quantification exercises and other types of activities.

Process and Findings

In December 2014, the objectives for this activity were fully met by analyzing the market data prior to and during the quantification exercise, using the data to inform the quantification exercise, and by conducting discussions throughout the process with USAID/Washington, IMS Health, project staff, and other stakeholders.

This report documents the following for the analysis and use of the market data:

- data sources, key features, and limitations of the Zambia market data

- results of the data review conducted

- description of how the data was used to inform the family planning quantification exercise.

The two new databases—resulting from the collaboration between IMS, MMV, ZAMRA, and the MOH—contain information about the quantities of pharmaceutical products approved by ZAMRA and that will be imported into the country, and the volumes received into the Medical Stores Limited (MSL).

Findings about the data include—

- Public sector data supplied by IMS Health for Depo-Provera injectable, implant, combined oral contraceptive, and emergency contraceptive were within 25 percent of the MSL issues data, for the same time period.

- Zambian regulations do not require importers to declare non-pharmaceutical products to ZAMRA, so the market data available for male and female condoms and for copper-T IUDs is very limited.

- The NGO and social marketing channel data extracted from the ZAMRA data source appear to be significantly understated. Potential reasons for this are discussed in the report.

Findings for the use of the data in the quantification exercise include—

- The market data can be used to estimate the commercial sector's market share for most family planning methods/products, particularly for the demographic-based forecast.

- The market data for the commercial sector volumes of Jadelle, Depo-Provera, and Noristerat can be used to estimate the annual consumption quantities, per brand, for that sector in Zambia.

- Assuming that this data collection process continues in future years, trend data can be used to facilitate supply planning.

Total market data, when available at a moderate- or higher-quality level, is a valuable tool for understanding the healthcare service and commodity provision within a country's different market sectors. Using this information can have many benefits, including in the areas of forecasting; budgeting; monitoring the impacts of policy changes; strengthening pharmacovigilance systems; and fostering greater collaboration across the market sectors to enhance equity, quality, access, and choice for a country's population.

Introduction

This activity, part of the core-funded, contraceptive security workstream for Task Order 4 (TO4) of the USAID|DELIVER PROJECT, specifically supports the development and expansion of total market approaches in the project's work.

In this report, total market data in the public health arena is defined as the consumption/sales data of health products from each market sector or channel, measured for a specific time period in a particular geographic region. The use of total market data in activities—national quantification exercises, for example—can be an evidence-based approach to ensure that the results of the activity accurately reflect the dynamics of the total market and the needs of the country's entire population. It may, therefore, improve the quality of the results for these activities. When total market data is not used for these activities, it is usually because high-quality market data is not readily available. In the past, high-quality information on product consumption/sales in the commercial sector has not been available in developing countries; even data for the NGO and social marketing sectors are often limited.

This report looks at how two new data sources can supplement the existing sources of information on the supply and use of family planning products in Zambia to inform an annual quantification exercise. The new datasets resulted from the collaboration between IMS Health, Medicines for Malaria Ventures (MMV), Zambia Medicines Regulatory Authority (ZAMRA), and the Ministry of Health (MOH) in Zambia.

In this activity, in December 2014, total market data resulting from this collaboration was provided by IMS Health and used to inform Zambia's national quantification exercise for family planning products.

The activity accomplished the following objectives:

- Reviewed the IMS-MMV-ZAMRA market data—assessed the key features and limitations of the data—as it relates to this national quantification exercise.

- Applied the data to the quantification exercise—e.g., estimation of each sector's market share for each family planning method/product.

- Considered the potential use of similar market data for future quantification exercises and for other types of activities.

This was a pilot activity for using market data provided by IMS Health—a sustainable market research product used by regulatory and governmental bodies worldwide, including by the U.S. Food and Drug Administration (FDA) and the World Health Organization (WHO)—to increase our understanding of the potential value of working with this total market information, as well as the challenges and limitations.

Market Data Supplied by IMS Health

National Context

ZAMRA, previously known as Pharmaceutical Regulatory Authority (PRA), is the statutory medicines regulatory body in Zambia, under the Medicines and Allied Substances Act No. 3 of 2013. ZAMRA was established to ensure that medicines and allied substances conform to the required standards of quality, safety, and efficacy throughout the chain of manufacture, importation, exportation, storage, distribution, supply, sales, and use.

Family planning products are distributed through four primary channels in Zambia—the public sector, NGOs, social marketing organizations, and commercial distributors selling through the private sector. Social marketing organizations distribute subsidized or free products through the private sector as a way to improve family planning access. Regulations require that importers and donors declare to ZAMRA the type and volume of all pharmaceutical products that each wants to import. Non-pharmaceutical products, such as male and female condoms, do not need to be declared. Moreover, all products to be distributed through the public sector are delivered to the Medical Stores Limited (MSL) and distributed from MSL directly to lower-level stores and health facilities.

To-date, three different types of information have been primarily used in Zambia to estimate the consumption of family planning products: (1) issues data for distributions from MSL to health facilities or lower-level stores; (2) information supplied by the principal social marketing organizations with the Society for Family Health (SFH) as the largest; and (3) information supplied by NGOs, notably Marie Stopes of Zambia (MSZ), Planned Parenthood Association of Zambia (PPAZ), and the Zambia Health Education and Communications Trust (ZHECT). Demographic and Health Surveys (DHS) data has also been used to understand the national method mix and source mix.

IMS Health

IMS Health, a U.S.-based company, collects, analyzes, and provides information, services, and technology for the healthcare industry globally. In many countries, IMS Health data is a commercial product, available for a fee. In Zambia, IMS Health began in 2012–2013 to collect market data for health products across all sectors, in collaboration with the MOH, ZAMRA, MSL, and MMV. IMS Health has an informal partnership with USAID. Currently, IMS Health's data in Zambia is not a commercial product; the data was provided to us without charge.

As a result of the collaboration in Zambia, facilitated by IMS Health, two new databases were created: (1) ZAMRA database—pharmaceutical products that ZAMRA approves for importation into Zambia, as recorded by ZAMRA, using custom software; and (2) MSL database—all receipts into MSL's central warehouse in Lusaka. These data sources capture data over time, offering future opportunity for trend analyses.

ZAMRA and the MOH have already used the two databases to highlight potential inappropriate use of anti-leprosy drugs; help identify the potential risk of topical steroid abuse in Zambia; raise questions related to procurement; and highlight how important the role of the commercial sector is in supplying the non-donor dominated commodities, including cardiovascular treatments. In addition, receipts data for antimalarials recorded in the MSL database have been validated against shipments notified to MMV by donors. This report focuses on whether, and potentially how, these databases can supplement the information already available for family planning products.

Data Sourced from ZAMRA Database

The data that IMS Health collects through ZAMRA include health products that are imported into Zambia. The importer submits the pro forma invoice and asks ZAMRA for an import approval certificate. IMS Health has trained ZAMRA staff and provided access to a flexible, analytical database to collect and maintain the data.

Following are some key features and limiting factors for the ZAMRA data source, which IMS Health identified to us, prior to the Zambia quantification exercise.

Features of ZAMRA data:

- Identifies the organization that submits the invoice and is applying for import approval.

- Includes products that have not been registered but have been given specific regulatory approval to be imported for a particular purpose.

- Entered by ZAMRA staff directly into the database at the ZAMRA facility.

Limiting factors for the ZAMRA data:

- Importers of non-pharmaceutical products—male or female condoms, etc.—are not required to apply for import approval certificates from ZAMRA; therefore, import data for these products are not available to ZAMRA or IMS Health through this source.

- Data is only collected for product shipments if the importer applies for an import approval certificate; IMS Health advised that, in some instances, international donors do not apply for these certificates, even for pharmaceuticals, and that imports for the social marketing channel also seem to bypass this import approval process.

- Data collected identifies the importer, not the organization receiving the goods.

- One import approval does not always correspond to a single and full shipment of all products indicated on the invoice; IMS Health cannot determine the actual delivery dates from the ZAMRA data.

- Although ZAMRA tracks product registration numbers in their data file, which are linked to manufacturer and factory site, identifying the registration number in the ZAMRA data is not always possible for various reasons, including shipping pack descriptions.

- This collaborative database supplies data on quantities of products imported into Zambia. In cases where health products are manufactured in Zambia and sold into the domestic market, data on such products would not be automatically captured by this database and would need to be sourced differently.

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Data Sourced from MSL Database

IMS Health also collects data from MSL, through MSL's product files. That data is for health products that MSL receives and stores. IMS Health extracts and analyzes data from the MSL inventory control system. The dates recorded in the system correspond to the dates when the receipts into MSL are recorded in MSL's inventory control system.

Following are some key features and limiting factors of the MSL data source, which IMS Health shared with us prior to the Zambia quantification exercise.

Features of MSL data:

- Provides product quantities received by MSL, identified by receipt date—the date the products are entered into MSL's inventory control system—and by shipper or funder.

- Includes all products delivered to MSL, pharmaceuticals and non-pharmaceutical products.

Limiting factors of MSL data:

- MSL does not receive health products imported for the commercial sector, so commercial sector data is not available using this process.
- MSL does not receive health products procured and imported directly by organizations within the social marketing or NGO sectors; therefore, their data also is not available using this process.
- MSL data may not identify the manufacturer, but only the shipper or funder.
- Most health products received by MSL, whether procured by international agencies or by the ministry, are intended for the public sector. Additionally, some NGOs *pull* quantities stored by MSL—PPAZ, MSZ, and ZHECT; SFH *pulls* quantities, as well.

It is useful to remember that the details of IMS Health's data collection process in Zambia are country-specific. In other countries, IMS Health may have other types of data sources—e.g., retail outlets, commercial importers/distributors—and the data collection process may look quite different.

Market Data Analyzed by Sector

In October 2014, IMS Health supplied data to support this activity; they slightly modified some of their data when this report was drafted. See annex A for the most recent version of the data. The data in this annex summarizes the data available in the two new databases, which resulted from the collaboration between IMS, MMV, ZAMRA, and the MOH.

This data were provided in annual format; the first year of data was from April 2009–March 10; the last year of data were from April 13–March 14. The data was couple-years of protection (CYP) per family planning method, per year. IMS Health also supplied their CYP conversion factors.

The data included CYP data, by method, for male condom, female condom, combined oral contraceptive (COC), progestin-only pill (POP), implant, injectable, intrauterine device (IUD), and emergency contraceptives (EC). For the implant and injectable methods, IMS Health supplied the CYP by product. The sole product for the implant method was Jadelle; the two products for the injectable method were Depo-Provera and Noristerat. The other CYP data was per method; the products included for the COC method were Microgynon and Oralcon-F; the POP method included one product, Microlut.

See the table in annex B for the data in the form of product quantities, rather than CYP. Project staff converted the data from CYP to quantities in order to review the data in the form of quantities and for use in the quantification exercise in Zambia. Staff added the last column in the table, which is an annual average calculated over five years, because significant inconsistencies were observed in the data for individual years in the table.

Reviewing the Data

In October and November 2014, project staff reviewed the market data. Additionally, a conference call was conducted between Denise Harrison (USAID/Washington), Peter Stephens (IMS Health), Trish Long (USAID | DELIVER PROJECT), and Safia Ahsan (USAID | DELIVER PROJECT). This conference call was held to discuss the primary issues/questions regarding the Zambia total market data and the in-country data collection process. Following are the results of the data reviews, which were done prior to the December 2014 exercise and during it.

Public Sector Data Review:
Table 1 provides the public sector data comparison between the MSL receipts data supplied by IMS Health and the MSL issues data, which the USAID | DELIVER PROJECT obtained from MSL, for the same period.

Table 1. Comparing Zambia MSL Issues Data with MSL Receipts Data (from IMS Health) for 2013-2014

	Logistics Data: MSL Issues for Public Sector (Apr13–Mar14)	IMS Health Data: MSL Receipts for Public Sector (Apr13–Mar14)	Percentage Difference between MSL Issues Data and MSL Receipts Data
Male condom	18,405,838	30,519,888	66%
Female condom	1,040,627		
Combined oral contraceptive	1,902,732	2,359,959	24%
Progestin-only pill	277,143		
Depo-Provera injectable	1,618,950	1,450,400	10%
Noristerat injectable	164,000	421,400	157%
Copper-T IUD	28,900		
Jadelle implant	127,000	139,000	9%
Emergency contraceptive	8,708	7,688	12%

Following are key observations from this table.

- The difference between the volume of male condoms received at MSL (data supplied by IMS Health) and the volume issued by MSL (logistics data) is significant. This discrepancy may exist because healthcare kits were included in the receipts data; they do not appear to be included in the issues data. Excluding the healthcare kits from the receipts data, the total is 18,690,000.
- Volumes of the combined oral contraceptive, Depo-Provera injectable, and Jadelle implant are quite similar between the receipts data and the logistics data.
- For female condoms, progestin-only pill, and Copper-T IUD, the MSL receipt totals—as analyzed by IMS Health—were zero for this time period. We have also confirmed that MSL did not receive new quantities of these products during April 13–March 14.
- Because approximately half the total volume of Noristerat received during the time period was received in March 2014—e.g., the final month of the comparison period—this may be the primary reason for the discrepancy between the receipts and logistics data for this product. It is unlikely that the quantity received in March 2014 would have been quickly issued, in its entirety, during the same month. If this March 2014 receipt was excluded, the gap between Noristerat receipts and issues would be much smaller.

The percentage differences between the logistics data and the receipts (IMS Health) data is largely because of a time lag: logistics data is MSL issues data, and the IMS Health data is MSL receipts data. The quantities received at MSL are not necessarily identical to the quantities issued during the same time period. Unless there are significant shortages in the field, MSL typically warehouses some of the commodities they receive and does not immediately redistribute all the quantities. As recommended practice in supply chain management, national medical stores organizations try to maintain inventory levels between established minimum and maximum levels in their central warehouses.

Additionally, IMS Health's own comparisons between the MSL and ZAMRA databases indicate that not all international donors consistently declare imports to ZAMRA, although all donor volumes may be captured in the MSL receipts database.

Comparing the MSL receipts and issues data may be useful in identifying dataset errors, significant demand increases for particular products, and instances of stock being *pushed* to the lower levels from MSL.

Commercial Sector Data Review:

While the authors could compare the public sector data supplied by IMS Health with existing logistics data, we did not have an equivalent to the logistics data for the commercial sector. DHS data does provide some significant perspective on the use of the commercial private sector by Zambians seeking family planning services and products. Table 2 is extracted from the Zambia DHS 2013 final report.

Table 2. Source of Modern Contraception Methods (Zambia DHS–2013)

Percentage distribution of users of modern contraceptive methods ages 15–49 by the most recent source of method, according to method, Zambia 2013–2014.

Source	Female Sterilization	Pill	IUD	Injectables	Implants	Male Condom	Total
Public sector	68.3	60.6	90.2	95.0	96.7	62.3	81.6
Private medical sector	31.2	16.6	9.6	4.7	3.1	9.5	9.3
Private hospital, Clinic	19.8	2.6	5.9	2.0	1.1	0.5	2.8
Mission hospital, Clinic	7.8	0.7	2.8	2.4	1.3	1.0	1.9
Pharmacy	0.0	12.7	0.0	0.1	0.0	7.1	4.0
Private doctor	0	0	0.9	0.1	0.3	0	0.1
Community-based agent, field worker	0	0.5	0	0	0	0.6	0.2
Mobile hospital, Clinic	3.6	0	0	0.1	0.4	0	0.2
Other private sector	0	0.1	0	0	0	0.2	0
Other source	0	22.7	0	0.2	0	26.5	8.8
Shop	0	22.4	0	0	0	25.1	8.5
Church	0	0	0	0.1	0	0.1	0.1
Friends, relatives	0	0.3	0	0.1	0	1.3	0.2
Other	0	0	0	0	0	0.4	0
Don't know	0.4	0	0	0	0	0	0
Missing	0.1	0.1	0.2	0.1	0.2	1.1	0.2

More than nine percent of users of modern contraceptive methods recently received their method from Zambia's private medical sector; the percentage varied by method—ranging from three percent for implants to over 16 percent for pills. Interestingly, in Zambia, the total percentage of users receiving their methods from the private medical sector has decreased from 16 percent to nine percent over the past six years. Another approximately nine percent of users recently received their method from another type of source, such as a shop; the methods most frequently purchased at shops are contraceptive pills and male condoms.

It appears that approximately 12.7 percent of women in Zambia that use a family planning method use oral contraceptives sourced from a private pharmacy. The ZAMRA data, as shown in annex B, contains dramatically lower volumes for oral contraceptives in the commercial sector. Possible reasons for this discrepancy include (1) data collected through ZAMRA database is incorrect, with invoices possibly missing; (2) DHS data is incorrect; (3) significant diversion from public sector; or (4) commercial importers are not declaring large-scale imports. Determining which of these are occurring is beyond the scope of this activity.

Table 3 contains the commercial sector data provided by IMS Health, after converting it from CYP to product quantities.

Table 3. Annual Commercial Sector Imports Declared to ZAMRA by Product

Commercial Sector	Apr 09–Mar10	Apr10–Mar11	Apr11–Mar12	Apr12–Mar13	Apr13–Mar14
Emergency contraceptive	0	0	100	4,200	1,120
Copper-T IUD	29	0	12	0	8
IUD with hormone	15	0	4	0	0
Injectable—three monthly (Depo-Provera)	330	512	100	150	200
Injectable—two monthly (Noristerat)	200	1,698	0	0	400
Combined oral contraceptive	147	21,645	45	90	1,306
Progestin-only pill	72	3,435	54	3,000	0

The ZAMRA database represents those applications that have been approved by ZAMRA for importation. All applications are assigned a unique number by ZAMRA, but not all applications are approved. Because each application is given a unique number, the proportions of applications included in the database can be estimated over time. According to IMS Health, in 2012, 84 percent of all applications were entered into the database, indicating that 16 percent were either rejected or missing; 85 percent were entered in 2013; and 81 percent were entered in 2014. However, approvals of applications made in late 2014 have not been fully analyzed. This level of consistency suggests that ZAMRA is recording most of the approved applications. Far greater variability would be expected if documentation on a large scale were missing.

IMS Health informed us that the investigations they carried out at ZAMRA on a 10 percent sample of invoices, entered by ZAMRA staff during a six-month period, indicate that data entry by ZAMRA staff is very accurate, with an error rate of less than one percent. All this suggests to IMS Health that, while it is possible that some paperwork may still be lost, it seems unlikely that data for family planning products are systematically mislaid. This applies to the imported pharmaceutical products. As stated earlier in this report, importers are only required to declare pharmaceutical products to ZAMRA. Therefore, IUDs that do not contain product, and male and female condoms, do not need to be declared to ZAMRA. The ZAMRA database cannot be used to describe the commercial market for these products.

Outside this exception, it seems to IMS Health that the ZAMRA database contains the vast percentage of approved applications made to ZAMRA. If this is true, and if commercial importers are declaring most of the pharmaceutical products they are importing, this means that commercial sector importers may play only a very minor role in providing family planning products in Zambia, outside of the known work that some importers do for international partners. Those partner-supplied volumes are visible through the MSL database.

Social Marketing Data Review:
Table 4 contrasts the social marketing logistics data, which was supplied by SFH for the December 2014 quantification exercise, with the social marketing channel data supplied by IMS Health. The data from SFH, September 2013–August 2014, was used because the SFH project ended in August 2014. (**Note:** A new SFH project is starting in the first half of 2015.) The SFH data is considered to be reliable because SFH directly supplied it and because SFH is the primary actor in the family planning social marketing arena in Zambia. Additionally, USAID provides support for SFH, and the mission's representative at the quantification exercise agreed with the overall numbers provided by SFH.

Table 4. Contrasting Social Marketing Data from SFH with Data Supplied by IMS Health

	Society for Family Health Data: Quantity Issued (Sep13–Aug14)	IMS Health Data: Social Marketing Total Quantity (Apr13–Mar14)	IMS Health Data: Social Marketing Annual Average (2009–2014)
Male condom	33,405,874	0	41,760
Female condom	558,416	0	0
Combined oral contraceptive	2,954,531	0	0
Progestin-only pill			
Depo-Provera			
Noristerat			
IUD	12,700	0	0
Implant	30,445	0	0

The social marketing channel data supplied by IMS Health includes data from April 2013–March 2014, as well as an annual average, based on five years of data from 2009 to 2014. IMS Health noted

during the months prior to the exercise that their Zambia social marketing data was not complete because the ZAMRA import approval process does not appear to be consistently used by actors in the social marketing arena. Also, quantities intended for this channel are not being disaggregated from other volumes because identifying information in the documentation is missing.

In any case, presently, the data has significant gaps. It is unrealistic to believe that only 41,760 male condoms entered Zambia's social marketing channel, on average, per year, during the last five years; or to believe that zero female condoms, COC, IUDs, or implants entered the country's social marketing channel annually during the last five years.

NGO Sector Data Review:
Table 5 contrasts the NGO sector logistics data—which PPAZ and ZHECT supplied in-person and MSZ sent in—with the NGO sector data supplied by IMS Health. Staff from PPAZ and ZHECT participated throughout the quantification exercise. The data from these NGOs was for December 2013–November 2014.

The NGO sector data supplied by IMS Health includes data from April 2013–March 2014; as well as an annual average, based on five years of data from 2009 to 2014. Upon examination of the IMS Health annual averages for this sector, these annual averages are significantly lower than the figures supplied by the NGOs. We understand the data supplied by the NGOs may be imperfect; however, it is not realistic to believe that zero volumes were consumed in the NGO sector during April 2013–March 2014.

Table 5. Comparing NGO Sector Data from MSZ, PPAZ, and ZHECT with Data Supplied by IMS Health

	MSZ, PPAZ, and ZHECT Data: Quantity Issued (Dec13–Nov14)	IMS Health Data: NGO Sector Total Quantity (Apr13–Mar14)	IMS Health Data: NGO Sector Annual Average (2009–2014)	Notes
Male condom	3,239,335	0	480,836	
Female condom	224,198	0	200	
Combined oral contraceptive	60,769	0	1,000	
Progestin-only pill	4,875	0	447,989	IMS Health annual average was skewed by more than 2 million pills recorded for the year 2009–2010
Depo-Provera	33,171	0	800	
Noristerat	47,363	0	0	
IUD	3,228	0	0	
Implant	29,964	0	0	

As stated earlier, IMS Health's own comparisons between the MSL and ZAMRA databases indicate that not all international donors declare imports to ZAMRA, although all donor volumes are captured in the MSL receipts database. The analysis documented in this report also suggests that the social marketing and NGO sector organizations distributing family planning products in Zambia can rarely be identified in either of the two new databases. For example, SFH is not recorded against the data in the ZAMRA database in 2012, 2013, or 2014. Likewise, PPAZ is visible as an importer in the ZAMRA database only in the first quarter of 2011.

Therefore, the data in the ZAMRA database does not reflect the known activity of these NGO or social marketing organizations. Because the NGOs and SFH *pull* quantities from MSL, but do not use MSL to store the quantities they procure on their own, the MSL receipts database does not reflect these organizations' total product usage.

In Zambia, IMS Health used an alternative approach to identify emergency contraceptives that social marketing organizations are distributing using brand names. Two brand names commonly associated with socially marketed emergency contraceptive products were in the ZAMRA database; however, a commercial importer imported both products. Potentially, these are socially marketed products imported from a country where excess socially marketed product has been released into the private market.

In conclusion, for the social marketing and NGO channels, it is clear that the two new databases cannot supplement existing information on the consumption of family planning products for these two channels. The lack of data for these channels in the ZAMRA database may reflect that these

organizations do not typically declare pharmaceutical product imports to ZAMRA; that ZAMRA has a different system of recording such imports; or that commercial importers have been commissioned to manage the importation process.

Using the Market Data in the December 2014 Quantification Exercise

Zambia's annual family planning quantification exercise was held December 15–19, 2014, at the Lodge at Sunset Villas in Lusaka. Maxwell Kasonde, Reproductive Health Supply Coordinator (RHSC) for the Ministry of Community Development, Mother and Child Health (MCDMCH), chaired the exercise. The USAID | DELIVER PROJECT Zambia team provided technical assistance. See annex C for the list of participants at the quantification exercise. This list includes both the members of the core quantification team and the stakeholders who attended the final sessions on December 18 and/or 19.

The quantification team, with technical leadership from the USAID | DELIVER PROJECT Zambia team, prepared the quantification report, which documents the process and outcomes of the December 2014 quantification exercise. Please refer to the Zambia quantification report for a full report of the process and outcomes (e.g., forecast, supply plan) from the exercise.

During the December 2014 exercise, commodity forecasts for calendar year 2015 and 2016 were developed using the three standard methodologies—consumption-based, demographic-based, and services-based. Following is a brief description of each methodology as it was applied in the Zambia exercise, as well as any related use of data supplied by IMS Health.

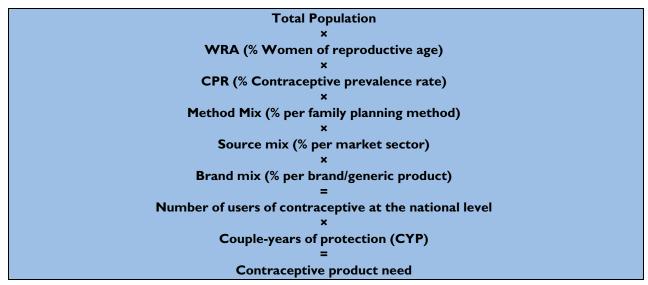## Consumption-Based Forecasting

Consumption-based forecasting includes the use of recent consumption data—or issues data as a proxy—to calculate the average monthly consumption (AMC), which will be used to compute the forecasts and product requirements that the ministry and/or international partners will fund. For this quantification exercise, because service delivery point (SDP)-level consumption data was not available through the logistics management information system (LMIS), MSL's central-level issues data was used. SDP-level consumption data would only have been available for Essential Medicines Logistics Improvement Program (EMLIP) facilities, and EMLIP has not yet fully rolled out across the country; even EMLIP facilities do not record the actual consumption. The issues from the EMLIP facility's pharmacy/store are recorded instead of actual consumption.

For this quantification exercise, the primary interest was in determining the quantities that would need to be stored in the MSL and made available for *pulls* from the public sector, as well as from the social marketing channel (SFH) and the NGO sector (MSZ, PPAZ, and ZHECT) for the forecast period. This consumption-based forecasting process does not need commercial sector data. Also, because the four major organizations from the social marketing and NGO channels for family planning products—MSZ, PPAZ, SFH, and ZHECT—provided their historical data and demand projections, the social marketing and NGO sector data from IMS Health was not needed to develop those forecasts.

Demographic-Based Forecasting

Figure 1 shows the basic formula used during the quantification exercise to develop demographic-based forecasts. The 2007 Zambia DHS report data was used as a resource. At the time, the full dataset from 2013 had not been released, and only preliminary 2013 Zambia DHS data was available. For example, while the estimated 2013 national contraceptive prevalence rate (CPR) was available, the method-specific CPR figures were not available. The Zambia DHS 2013 final report is now available, and it was used as a resource in preparing this report.

Figure 1. Methodology for Demographic-Based Forecasting

Total Population
×
WRA (% Women of reproductive age)
×
CPR (% Contraceptive prevalence rate)
×
Method Mix (% per family planning method)
×
Source mix (% per market sector)
×
Brand mix (% per brand/generic product)
=
Number of users of contraceptive at the national level
×
Couple-years of protection (CYP)
=
Contraceptive product need

The market data supplied by IMS Health was used to help determine the source mix—to assign percentage per market sector for each family planning method/product. Table 6 compares the source mix percentages for the commercial sector that were used during the earlier January 2014 quantification exercise with the source mix percentages used in this December 2014 exercise. The commercial-sector source mix percentages used in January 2014 were *not* evidence-based, because the data was not available for the quantification team.

Table 6. Estimated Commercial Sector Market Share, by Family Planning Method

Family Planning Method	Percentage of Family Planning Clients in Zambia Receiving Their Method via the Commercial Sector (per January 2014 exercise—Not evidence based)	Percentage of Family Planning Clients in Zambia Receiving Their Method via the Commercial Sector (per December 2014 Exercise—IMS Health data)
Male condom	2%	2%[1]
Female condom	0.5%	0%
COC	2%	0.09%
POP	0%	0.88%
Injectable	0%	0.04%

Family Planning Method	Percentage of Family Planning Clients in Zambia Receiving Their Method via the Commercial Sector (per January 2014 exercise—Not evidence based)	Percentage of Family Planning Clients in Zambia Receiving Their Method via the Commercial Sector (per December 2014 Exercise—IMS Health data)
IUD	0%	0.03%
Implant	0%	0.01%

[1]Because IMS Health commercial sector data for male condoms equaled zero (due to national regulations that allow non-pharmaceutical products to be imported without an import approval certificate), the quantification team used the 2% figure as a best-guess estimate.

Although it is expected that healthcare provision coverage in the public and commercial sectors is mapped at the district level in Zambia, actors in the commercial sector typically do not supply their family planning product use/consumption data to enable such mapping.

During the December 2014 exercise, the commercial sector was the only sector for which source mix percentages from IMS Health were used in the demographic-based forecasting process. The source mix percentages for the public sector, social marketing, and NGO sectors came directly from MSL issues data, SFH's own data which their representative brought to the quantification exercise, and the data directly provided by MSZ, PPAZ, and ZHECT representatives.

Services-Based Forecasting

Services-based forecasting requires client caseload data that, using dispensing protocols based on national guidelines, is converted to product usage estimates.

For the quantification team's work in December 2014, although the client data was available from the national health management information system (HMIS), this client data was not disaggregated by method; therefore, it could not be used to construct forecasts for each method and/or product. Even if the HMIS caseload data is disaggregated by method in the future, it still may not yield reliable forecasts due to the lack of consistent family planning product dispensing protocols in use across the country and because of other data quality issues.

Zambia's current HMIS system also collects product consumption data. The quantification team used this data to construct a forecast; although, because this forecast was not based on the caseload data, it was not actually *services-based*. However, it was based on HMIS data, which helped to gauge the reliability of data in the HMIS system.

A services-based forecast would typically convert services data into product forecasts for those facilities that receive products through the health ministry and/or international partners. Commercial sector data is not needed. Because the data supplied by IMS Health is not in the form of caseload data, it cannot be used to generate services-based forecasts.

Recommendations for Future Use of Market Data in Quantification Exercises in Zambia

- **Brand mix data:** Data at the level of specific brands/generics was not available in December 2014, except for implants and injectables; future brand-specific data could be used to develop demographic-based forecasts; e.g., using this data in the brand mix calculations. The data can also help the quantification team to better understand the total national contraceptive market and the method/product choices available to, and made by, the population.

- **Data on non-pharmaceutical health products:** If future market data were available for all major family planning methods, including male and female condoms, this would be very helpful. Male condoms are readily available in many retail outlets in Zambia, and it would be useful to know the volumes and brands.

- **Social marketing and NGO sectors:** IMS Health market data for the social marketing and NGO channels was unrealistically low, as noted earlier in this report; if/when the reliability of this data increases, it can be used to verify the data supplied by in-country partners SFH, MSZ, PPAZ, and ZHECT.

- **Caution in addressing data limitations:** While quality of market data is very important, the limitations for the data discussed in this report should be addressed with caution to avoid unintended negative consequences. For instance, if multiple importers currently do not seek import approval certificates consistently from ZAMRA, this could be because they want to avoid lengthy delays in importation or additional transactional costs.

- **Efficiency of quantification exercise:** When the gaps in the IMS-MMV-ZAMRA market data in Zambia are eliminated, certain data items can be provided to the leaders of the national quantification exercise in the weeks prior to the exercise to enable them to use the data efficiently.

  These data items include—

  - market share percentages by sector and family planning method/product

  - listing of specific brands/generics in the national total market, with estimated annual quantities and market share percentages

  - graph of the sector/product volumes, including changes over time—if market data of reliable quality is available across multiple years.

- **Other in-country opportunities to use market data:** Please refer to the "Outlook for Future Use of Market Data" section of this document for a discussion of diverse ways in which market data can be used.

- **Other programmatic opportunities:** Although this report focuses on the application of market data toward family planning programs, market data can be useful for many health conditions.

Summary and Conclusions for the Zambia Activity

The two new databases created through the collaboration between IMS, MMV, ZAMRA, and MOH contain information about the quantities of pharmaceutical product approved by ZAMRA to be imported into the country and the volumes received into the MSL.

In Zambia, for family planning products, importers are only required to declare pharmaceutical products to ZAMRA; in some countries, like Uganda, we understand from IMS Health that both pharmaceutical products and non-pharmaceutical health products must be approved for importation. Because of this feature of the ZAMRA database, this database contains very little information on male or female condoms or on non-hormonal IUDs. This is not true of the database of MSL receipts where data on all received products should be recorded.

Analyses in this report indicate that the volume of family planning pharmaceutical products imported by commercial importers appears to be a tiny fraction of volumes delivered into the public sector. Therefore, adding this commercial-sector data to the family planning quantification exercise adds little to the analysis of actual total commodity requirements, although commercial data can be useful in informing brand mix analysis. IMS Health noted that other analyses carried out as part of the recent training by IMS and MMV at the MOH suggest that the importance of the commercial sector is greater in other health treatment areas that are not donor-dominated.

Regarding the NGO and social marketing channels, neither the MSL nor ZAMRA databases can add to the quantification for these channels. Volumes received by such organizations are not found for the most part in the new ZAMRA dataset, possibly for one of these reasons below:

1. Commercial importers handle the administration (e.g., the volumes are *masked*).
2. Those organizations may not inform ZAMRA about the volumes imported.
3. ZAMRA may not routinely report these data.

The first of these potential reasons is unlikely because the volumes attributed to the commercial sector in this activity appear very low, lower than the volumes known to be distributed via the social marketing and NGO channels.

For the MSL receipts database, review of both the MSL receipts and logistics (issues) data may be useful for implementing partners and during the quantification process; however, the addition of the MSL receipts data alone does not clarify the total market family planning product sales/consumption volumes. The receipts database may be useful in validating issues data and in exploring the relationship between issues data and actual demand for these products in the field.

Outlook for Future Use of Market Data

Generally, this section of the report discusses the potential for ministries and implementing partners to use market data. Market data, of at least a moderate quality–level, would be useful in the countries where we have operated and useful for the health programs for which we have provided supply chain support. Knowing more about how the commercial sector provides health services and products would be useful for a national health program's strategic and annual planning and could assist the public sector in providing stewardship, which would help to ensure equitable access to quality, affordable health services and products.

Why should we use total market data?

The impetus continues to grow for financial sustainability and country ownership when providing health services and commodities in developing countries—while also pursuing overarching goals, such as equity, access, choice, and quality.

In most countries, these goals are most efficiently and effectively pursued by engaging all the country's market sectors in a suitable way for that country's environment and growth. The market sectors or channels include public, social marketing, NGO, and commercial. These channels provide health services and commodities through healthcare facilities, pharmacies, drug sellers, community-based distribution, and/or retail outlets. In many countries, however, comprehensive market data regarding the provision of health services and commodities in all sectors is not available.

Total market data can help stakeholders better understand the levels of service and commodity provision provided by the various market sectors and channels and to assess the best opportunities to increase access and availability for the country's population. Total market data adds value in areas that include financing and budget planning; policy analysis and refinement; patient safety and pharmacovigilance; and multisectoral trends and prices for essential medicines.

How should we use total market data?

1. **In-Country Commodity Security Mechanisms**

Each market sector or channel can be strengthened by mechanisms that include a national commodity security committee or a market segmentation analysis. The total market data can add value to these mechanisms.

2. **Quantification Exercises**

Market data can be used to inform quantification exercises, either national- or lower-level exercises. Because quantification exercises typically have strict timetables and deliverables—e.g., commodity forecasts, gap analyses, supply plans—market data is applied most effectively to the exercises in the following ways:

- Market data is analyzed and organized before the quantification exercise, including an assessment of the data quality.

- Based on the data quality assessment, only market data of reasonably high quality is used in the quantification exercise. If the market data is only reliable for particular market sectors or products, only that data should be used in the quantification.

- The following data items could be provided to the leaders of the quantification team prior to the exercise:
    - market share percentages by sector/channel and product
    - listing of specific brands/generic products in the national total market, with estimated annual quantities, and market share percentages
    - graphing of the sector/product volumes, over time, if data quality allows.

Because time constraints are placed on a quantification exercise, and participants need to focus on producing forecasts, gap analyses, and supply plans, a quantification exercise is not the ideal setting for a rich discussion of total market data. The market data can be applied to the quantification exercise as previously described; and, if needed, a focused discussion on the details of the market data can take place in a different venue.

3. Focused Meeting or Workshop

A dedicated meeting/workshop can focus on the total market data, as well as on any other available data related to service caseloads and/or commodity volumes across market sectors/channels. This meeting could be similar to a market segmentation review, although on a smaller scale.

The meeting's objectives might include the following:

- Review and discuss the available market data, based on the current levels of health indicator performance—e.g., CPR, maternal mortality rate—and national priorities.

- Assess whether this market data is communicating/confirming any new findings.

- Identify and discuss potential actions/interventions, given the findings.

- Establish some type of action plan and means for effective follow up.

A mechanism, such as a commodity security committee, can be used to follow up on actions or interventions taken by one or more organizations. It is helpful if follow-up is established because the planned actions/interventions may change, be delayed, or be canceled. Stakeholders can discuss how best to respond to such events.

The availability of total market data also can help assess the relative importance and role of different actors in the market. This knowledge can improve understanding of the different actors' potential ability to contribute to interventions and to respond to events.

It is also possible that findings from the data review may be useful in longer-term planning—e.g., for the health ministry and/or for international partners—but not for short-term actions.

4. Inform Strategic Planning and Routine Operational Activities

While market data can be very useful to examine and discuss in discrete events or meetings, the greatest long-term impact may be when used on an ongoing basis to inform planning and operational activities. For instance, the market data may be useful to monitor public health policy interventions, strengthen pharmacovigilance systems, refine geographic and programmatic priorities for providing services and products in the public sector, conduct advocacy to encourage greater engagement with the private sector, and monitor product affordability and price trends in the country.

5. Seek Varied Sources of Market Data

IMS Health has a longstanding presence across high-income countries; it also has a presence in countries that include Botswana, Ghana, India, Kenya, South Africa, Uganda, and Zambia. Sanisphere has implemented projects in various countries, particularly in Africa and Asia. Regional players are also evolving, including in sub-Saharan Africa.

Are there situations when we should not use total market data?

When total market data is being considered for use, the quality of the data is very important. This data should only be used to develop forecasts, make decisions, and plan and implement activities and interventions if it is an acceptably high quality. Also, cost is a factor when considering use of market data because a significant fee is typically required to access the data. Relevant budgets in the future may need to factor in the cost of data access, and/or partnerships may need to be forged or strengthened to enable data access at a discounted rate or without charge.

Overall Conclusions

This activity was a pilot project—using total market data to inform the work of the USAID | DELIVER PROJECT, for quantifying family planning methods/products.

As documented in this report, project staff reviewed the market data supplied by IMS Health, assessed key features and limiting factors related to the data, used this data to inform the annual national family planning quantification exercise in Zambia, and considered the value-added and limitations for using total market data in the future. The conversation for future use of total market data will, over time, definitely continue and evolve.

Total market data, when available at a reasonably high quality, can be a valuable tool for a ministry, national health program, or international partner to increase their understanding of healthcare service and commodity provision within a country's market sectors and channels.

Through this increased knowledge, many benefits may be sought:

- developing more accurate commodity forecasts, supply plans, and budgets

- monitoring and ensuring provision of high-quality health products across the sectors

- multisectoral collaboration to improve national coverage for essential healthcare services and products

- strengthening health ministry strategic and operational planning

- shaping interventions to strengthen equity, affordability, and quality choices in the country

- informing the actions and planning of international partners to foster greater commercial sector participation and to support the growth of the commercial market in the country.

Annex A

IMS-MMV-ZAMRA Data

This table, supplied by IMS Health, combines the data from the two new databases created from the collaboration between IMS, MMV, ZAMRA, and the MOH.

	CYP MAT/M03/2010	CYP MAT/M03/2011	CYP MAT/M03/2012	CYP MAT/M03/2013	CYP MAT/M03/2014
EC					
Commercial	-	-	5	210	56
Donor	1,000	-	-	630	384
EC - SM Brand†					
Commercial	4	850	-	500	250
Female condom‡					
Donor	13,333	7,917	5,000	12,083	-
MoH & Faith$^\Omega$	-	5,000	-	-	-
NGO	-	-	8	-	-
IUD					
Commercial	133	-	55	-	37
Donor	69,000	-	67,620	-	-
MoH & Faith$^\Omega$	97,980	88,320	92,460	51,060	-
IUD with hormone					
Commercial	50	-	13	-	-
Male condom‡					
Donor	47,400	41,668	100,800	35,094	90,000
MoH & Faith$^\Omega$	77,419	45,670	243,555	148,472	164,332
NGO	-	29	625	19,381	-
Social Marketing$^\top$	-	1,740	-	-	-
Injectable - 3 monthly					
Commercial	83	128	25	38	50
Donor	-	-	-	73,700	75,000
MoH & Faith$^\Omega$	241,800	133,200	507,800	371,800	287,600
NGO	-	500	500	-	-
Social Marketing	-	-	-	-	-
Implant					
Commercial	-	228	-	-	-
Donor	72,200	132,240	99,940	95,000	421,800
MoH & Faith$^\Omega$	144,020	114,000	112,860	107,540	106,400
Social Marketing	-	-	-	-	-
Injectable - 2 monthly					
Commercial	33	283	-	-	67
Donor	74,183	26,767	15,217	22,917	70,233
MoH & Faith$^\Omega$	-	8,983	-	-	-
Social Marketing	-	-	-	-	-
Oral contraceptive - Combination					
Commercial	10	1,443	3	6	87
Donor	80,640	6,144	-	87,360	29,664
MoH & Faith$^\Omega$	40	255,000	-	39,000	127,667
NGO	-	333	-	-	-
Social Marketing	-	-	-	-	-
Oral contraceptive - Progestin only					
Commercial	5	229	4	200	-
Donor	219,405	37,582	-	-	-
NGO	149,330	-	-	-	-
Social Marketing	-	-	-	-	-

† Imports of brand names associated with SM (Pregnon and Norlevo)
‡ No commercial imports recorded by ZAMRA as importers not required to declare imports of non-medicines
$^\top$ Identified by name of importer (Society for Family Health)
Ω The Central Medical Stores supplies both Government facilities and those run by the CHAZ. To this volume we have added the imports brought in by church organisations

Annex B

IMS-MMV-ZAMRA Data Converted from CYP to Commodity Quantities

	Estimated Quantity Apr09 - Mar10	Estimated Quantity Apr10 - Mar11	Estimated Quantity Apr11 - Mar12	Estimated Quantity Apr12 - Mar13	Estimated Quantity Apr13 - Mar14	Annual Average Quantity (2009-2014)
Male condom [2]						
MOH & Faith	9,290,304	5,480,453	29,226,600	17,816,640	19,719,888	16,306,777
Donor	5,688,000	5,000,112	12,096,000	4,211,296	10,800,000	7,559,082
NGO		3,456	75,024	2,325,700		480,836
Social Marketing [3]		208,800				41,760
TOTAL	*14,978,304*	*10,692,821*	*41,397,624*	*24,353,636*	*30,519,888*	
Female condom [2]						
MOH & Faith		600,000				120,000
Donor	1,600,000	950,000	600,000	1,450,000		920,000
NGO			1,000			200
TOTAL	*1,600,000*	*1,550,000*	*601,000*	*1,450,000*	*0*	
Combined Oral Contraceptive (COC)						
MOH & Faith [4]	600	3,825,000		585,000	1,914,999	1,265,120
Donor	1,209,600	92,160		1,310,400	444,960	611,424
NGO		5,001				1,000
Commercial Sector	147	21,648	50	90	1,306	4,648
TOTAL	*1,210,347*	*3,943,809*	*50*	*1,895,490*	*2,361,265*	
POP						
Donor	3,291,075	563,733				770,962
NGO	2,239,944					447,989
Commercial	72	3,440	54	3,000	0	1,313
TOTAL	*5,531,091*	*567,173*	*54*	*3,000*	*0*	
Depo-Provera injectable						
MOH & Faith [4]	967,200	532,800	2,031,200	1,487,200	1,150,400	1,233,760
Donor				294,800	300,000	118,960
NGO		2,000	2,000			800
Commercial	330	510	100	150	200	258
TOTAL	*967,530*	*535,310*	*2,033,300*	*1,782,150*	*1,450,600*	
Noristerat injectable						
MOH & Faith [4]		53,900				10,780
Donor	445,100	160,600	91,300	137,500	421,400	251,180
Commercial	200	1,700	0	0	400	460
TOTAL	*445,300*	*216,200*	*91,300*	*137,500*	*421,800*	
Copper T IUD						
MOH & Faith [4]	21,300	19,200	20,100	11,100		14,340
Donor	15,000		14,700			5,940
Commercial	29		12		8	10
TOTAL	*36,329*	*19,200*	*34,812*	*11,100*	*8*	
IUD with Hormone						
Commercial	15	0	4	0	0	4
TOTAL	*15*	*0*	*4*	*0*	*0*	
Jadelle implant						
MOH & Faith [4]	37,900	30,000	29,700	28,300	28,000	30,780
Donor	19,000	34,800	26,300	25,000	111,000	43,220
Commercial	0	60	0	0	0	12
TOTAL	*56,900*	*64,860*	*56,000*	*53,300*	*139,000*	
Emergency contraception [1]						
Donor	20,000			12,600	7,688	8,058
Social Marketing	70	17,000		10,000	5,000	6,414
Commercial			100	4,200	1,120	1,084
TOTAL	*20,070*	*17,000*	*100*	*26,800*	*13,808*	

[1] Imports of brand names associated with SM (Pregnon and Norlevo)

[2] No commercial imports recorded by ZAMRA as importers not required to declare imports of non-medicines

[3] Identified by name of importer (Society for Family Health)

[4] The Central Medical Stores supplies both Government facilities and those run by the CHAZ. To this volume we have added the imports brought in by church organisations
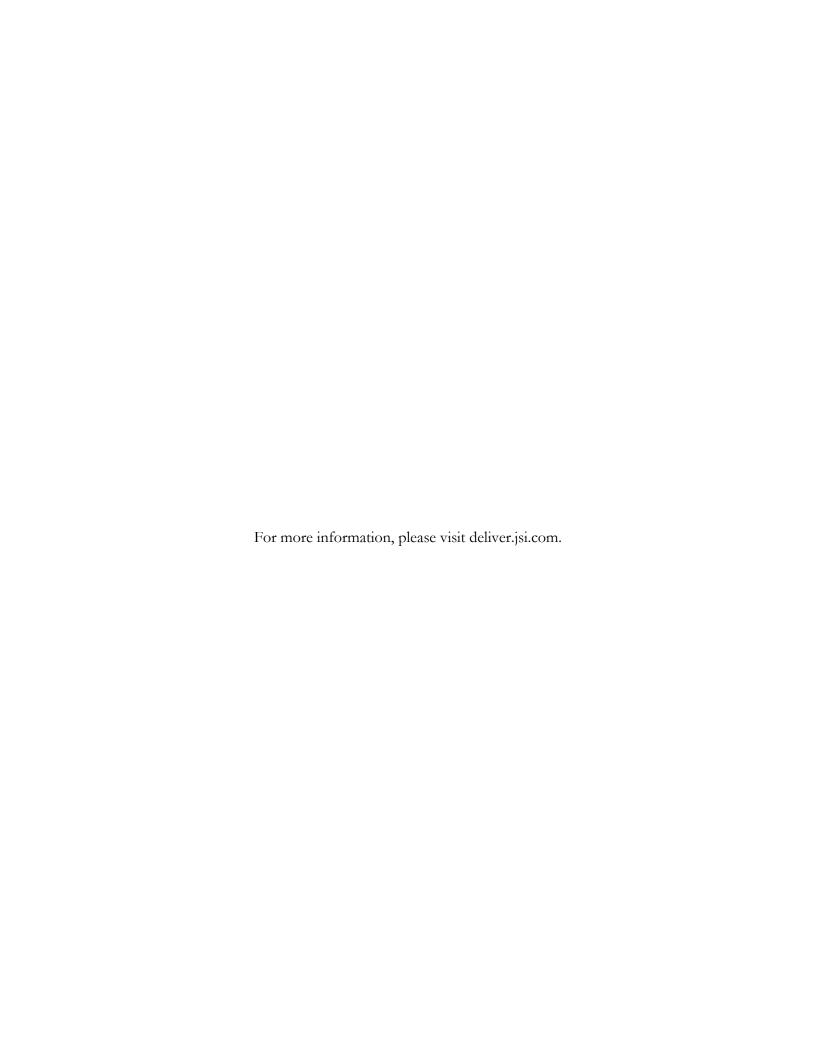
Annex C
Quantification Exercise Participants

		Family Planning Annual Quantification Exercise 15–19 December 2014 at Sunset Villas, Lusaka			
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18	Kenneth Lwando	District Pharmacist	MCDMCH / Chongwe	0977 476526	klmwamba@yahoo.com
19	Beenzu Michelo	QA Officer	SFH	0979 437177	beenzum@sfh.org.zm
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