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Analysis of the Global Fund Financed Market for TB Medicines: *Competitive landscape, market shares, product volumes and product variety*

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Acknowledgements

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Disclaimer

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Background

Ensuring consistent access to affordable, quality tuberculosis (TB) medications remains a key focus area in global health. There are commodity access problems for first-line TB medicines and second-line TB medicines/multi-drug resistant TB medicines. In order to address these access issues, it is important to have a thorough understanding of the current market structure, competitive landscape and product variance. This analysis of the market for different TB medicines includes understanding the dollar value of the each market, examining volumes and types of treatments purchased (including both the formulation strength and secondary package type), and observing existing purchasing trends by country.

The present market analysis uses publicly available information and data to characterize the markets for TB products. Simplistic market assessments are provided for each of the TB medicines (both first-line drugs (FLDs) and second-line drugs (SLDs)) reported to the Global Fund Price and Quality Reporting (GF-PQR) database. Purchase orders reported to the GF-PQR database between January 1, 2011 and December 31, 2012 were included in this preliminary market analysis. Often there is some lag time between order fulfillment and reporting to the GF-PQR database. As a result, reported volumes and values may be higher for 2011 as compared to 2012 as it may be possible that 2012 entries were not yet complete at the time of data extraction (June 2013). Entries lacking complete information (i.e., missing pack quantity and/or pack cost information) at the time of the data extraction were excluded from this analysis. In addition, any pending orders were omitted from this analysis.

Selected purchase orders and the accompanying analyses are only reflective of market trends within the donor-funded and specific public sector procurements made using the Global Drug Facility for TB markets. It does not reflect the majority of domestically funded public sector purchasing, particularly among the larger middle-income markets (i.e., Brazil, South Africa, India, China), any of the purchases made for private sector TB markets, or other donor funding for first-line and second-line TB medicines apart from the Global Fund.

Analysis of each TB product includes:

- Supply source mapping
- Market share breakdown by volumes purchased under Global Fund grants
- Market share breakdown by total dollar value (in USD) as financed through Global Fund grants
- Country-level trends outlined by units purchased and supply source

Supply source mappings provide a high level graphic representation of the formulations and secondary package types purchased in 2011 and 2012 for each TB product in the GF-PQR. This information provides a basic outline of purchasing trends by formulation and secondary packaging type. Market share information by manufacturer is highlighted for 2012 and 2011 - 2012 combined. This comparison was done to identify whether the trends highlighted for the most recent calendar year were similar or dissimilar to the previous two years combined. Any

major deviations would identify markets experiencing larger shifts in supply sources. To calculate volumes purchased for each product, formulation and secondary package type were adjusted to a standard strength and size whenever possible. This was the lowest unit in which purchased transactions occurred not necessarily the lowest dosing unit. For products such as para-aminosalicylic acid (PAS), TB treatment kits and certain other fixed dose combination products, adjusting the formulation strength and/or secondary package type was not possible and so the market share breakdown is based on the dollar value.

GF-PQR purchases were also organized by each country's manufacturing source and purchase size (i.e., the number of units by formulation and secondary package type) in order from highest to lowest volume orders. This information provides an overview of purchasing trends by country. Volumes and values reported reflect Global Fund financed purchases only.

Table 1: Total Dollar Value of Global Fund Financed Purchases in 2012

Product	Total Global Fund Financed Purchases, 2012
Capreomycin	\$5,169,567
Ethambutol + Isoniazid + Pyrazinamide + Rifampicin – FDC	\$5,099,610
PAS Sodium	\$4,943,142
Cycloserine	\$4,332,452
Isoniazid + Rifampicin – FDC (Dispersible and Non-Dispersible)	\$3,401,354
Streptomycin	\$1,657,501
Kanamycin	\$1,089,268
Ethambutol + Isoniazid + Pyrazinamide – FDC	\$1,073,338
TB Treatment Kit	\$906,782
Amikacin	\$671,973
Prothionamide	\$594,223
Ethambutol + Isoniazid – FDC	\$558,515
Levofloxacin	\$387,087
Moxifloxacin	\$355,774
Isoniazid + Pyrazinamide + Rifampicin – FDC	\$290,984
Ethionamide	\$215,357
Ethambutol	\$214,581
Isoniazid	\$185,856
Amoxicillin + Clavulanate	\$131,988
Ofloxacin	\$46,239
Pyrazinamide	\$134,548
Rifampicin	\$54,257

For some products the volumes/values presented from this analysis may represent only a small fraction of the total global purchases of this product because the Global Fund does not finance large quantities of that product. In other instances, it may be that the value is genuinely low because a particular product is being phased out of treatment regimens and/or many patients do not use it. Analysis was not included for those product markets with a total value less than

\$250,000 in the more recent purchase year (i.e., 2012). Ethionamide, ethambutol, isoniazid, amoxicillin + clavulanate, ofloxacin, pyrazinamide, rifampicin, and terizidone were removed from this analysis (Table 1).

In a number of product markets there was a single supply source reported to the GF-PQR database. Single supply markets are classified by year (2011 & 2012) in table format. A third table, following the individual year breakdowns, organizes the products sourced from a single supplier in 2011 and 2012. The single supply market tables are included in the final section of this report.

Product Market Analysis

First-Line Drugs

Ethambutol + Isoniazid – Fixed Dose Combination

A single manufacturer, Cadila Pharmaceuticals provided supply for ethambutol + isoniazid, FDC in 2011 and 2012. One order was placed during each of these two years. The value of the Global Fund financed purchases for this formulation for both years was \$638,595; \$80,080 in 2011 and \$558,515 in 2012. Timor-Leste purchased 3,850 units from Cadila Pharmaceuticals in 2011 while Uganda purchased 27,581 units from Cadila Pharmaceuticals in 2012.

Table 2: Ethambutol + Isoniazid Global Fund Purchases by Country

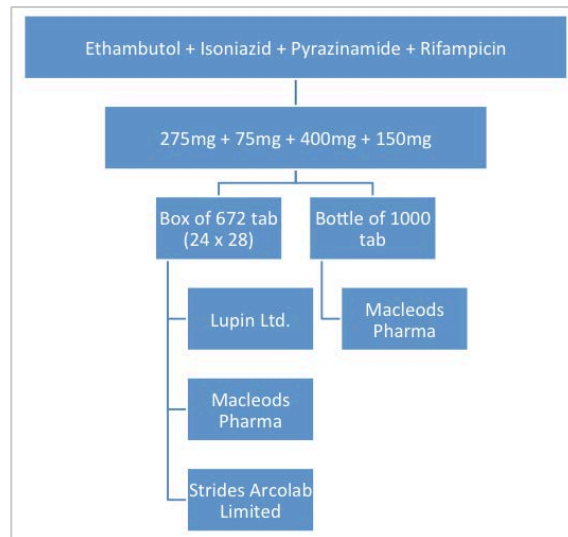
Ethambutol + Isoniazid, 400mg + 150mg, Box of 672 tab (24 x 28)		
Country	Units Purchased	Manufacturer
Uganda	27,581	Cadila Pharmaceuticals Ltd.
Timor-Leste	3,850	Cadila Pharmaceuticals Ltd.

Table reflects Global Fund PQR data from 2011 & 2012

Ethambutol + Isoniazid + Pyrazinamide + Rifampicin – Fixed Dose Combination

A single FDC formulation was reported for ethambutol + isoniazid + pyrazinamide + rifampicin in the GF-PQR between 2011 and 2012. This formulation was packed into two different secondary package types. Three different manufacturers produced boxes of 672 tablets (24 x 28 blisters) – 219,406 total units purchased in 2011 and 121,334 total units purchased in 2012 – while one manufacturer produced bottles of 1,000 tablets – 944 total units purchased in 2011.

Figure 1: Ethambutol + Isoniazid + Pyrazinamide + Rifampicin GF-PQR Supply Mapping



The value of the Global Fund financed purchases for ethambutol + isoniazid + pyrazinamide + rifampicin was \$7,929,133 in 2011 and \$5,099,610 in 2012.

Figure 2: Ethambutol + Isoniazid + Pyrazinamide + Rifampicin Market Share Analysis, 2012

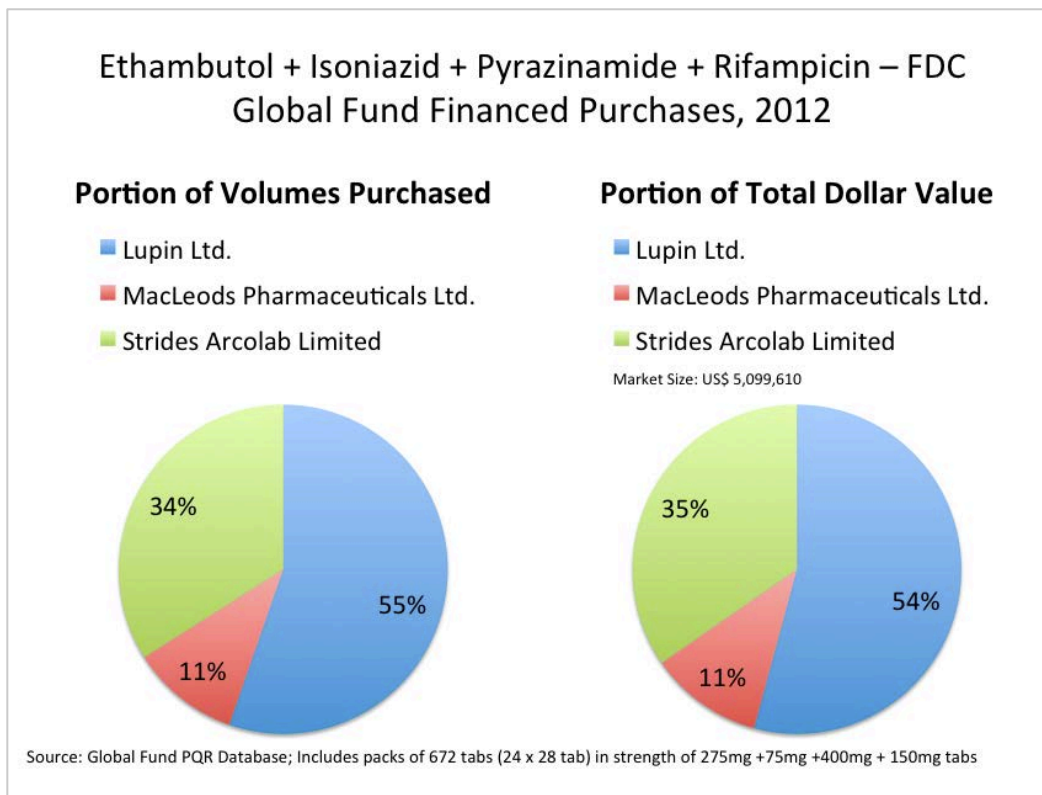
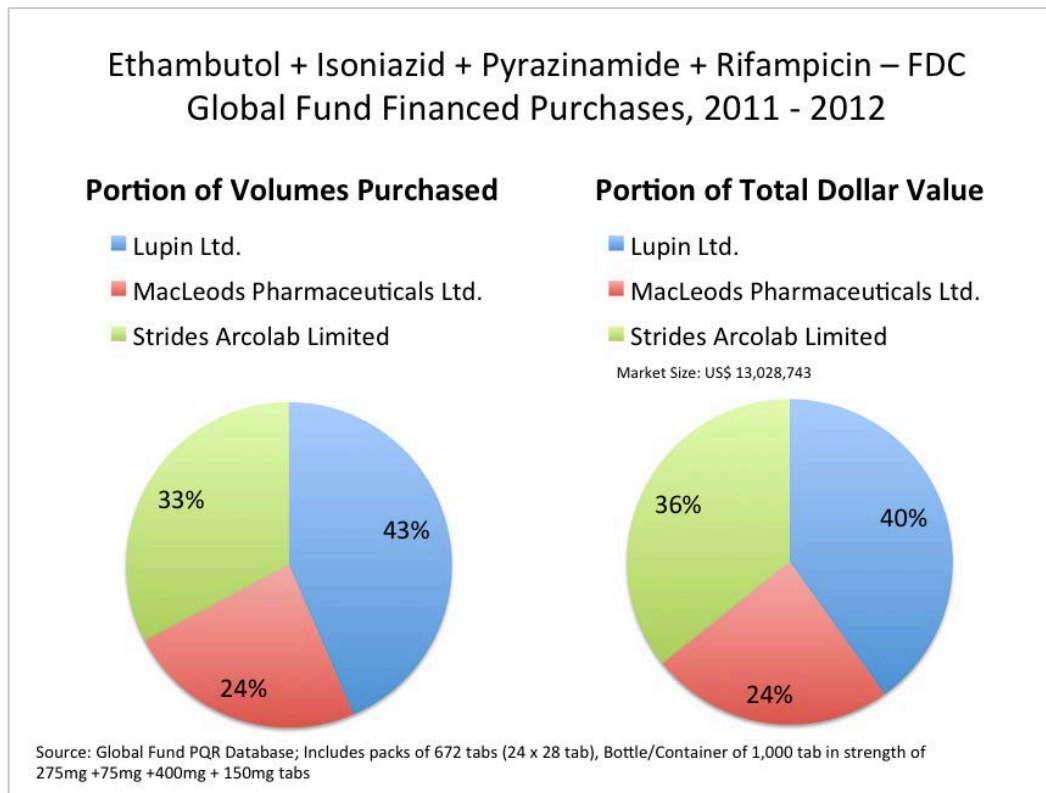


Figure 3: Ethambutol + Isoniazid + Pyrazinamide + Rifampicin Market Share Analysis, 2011-2012



The majority of purchases placed under Global Fund grants for this formulation were for boxes of 672 tablets (24 x 28 blisters). Ethiopia, Democratic Republic of Congo, Zambia and Nigeria purchased the largest quantity of units (each >30,000 units).

Table 3: Ethambutol + Isoniazid + Pyrazinamide + Rifampicin Global Fund Purchases by Country

Ethambutol + Isoniazid + Pyrazinamide + Rifampicin, 275mg +75mg + 400mg +150mg			
Country	Units Purchased		Manufacturer
	Box of 672 tab (24 x 28)	Bottle of 1,000 tab	
Ethiopia	55,321	-	Macleods Pharm.
DR Congo	52,862	-	Lupin Ltd. (28,387); Strides Arcolab Ltd. (24,475)
Zambia	37,700	-	Strides Arcolab Ltd.
Nigeria	35,633	-	Lupin Ltd. (27,678); Strides Arcolab Ltd. (7,955)
Bangladesh	22,455	-	Lupin Ltd.
DPR Korea	17,207	-	Lupin Ltd. (7,294); Macleods Pharm. (2,950); Strides Arcolab Ltd. (6,963)
Zimbabwe	14,777	-	Lupin Ltd.
Cambodia	13,371	-	Strides Arcolab Ltd.
Nepal	7,721	-	Strides Arcolab Ltd.
Uganda	7,425	-	Macleods Pharm.
Sudan	6,814	-	Lupin Ltd.
Somalia	6,433	-	Strides Arcolab Ltd.
Afghanistan	6,335	-	Lupin Ltd.
Thailand	3,821	-	Lupin Ltd.
Sri Lanka	3,500	-	Macleods Pharm.
Iraq	3,480	-	Lupin Ltd.
Sierra Leone	3,368	-	Lupin Ltd.
Liberia	3,276	-	Lupin Ltd.
Myanmar	3,155	-	Lupin Ltd. (500); Macleods Pharm. (2,655)
Burundi	3,138	-	Lupin Ltd.
Uzbekistan	3,063	-	Macleods Pharm.
Cote d'Ivoire	3,007	-	Strides Arcolab Ltd.
Kyrgyzstan	2,704	-	Lupin Ltd.
South Sudan	2,700	-	Lupin Ltd.
Haiti	2,420	-	Lupin Ltd.
Benin	1,509	720	Macleods Pharm.
Timor-Leste	2,050	-	Strides Arcolab Ltd.
Armenia	2,018	-	Lupin Ltd.
Syrian Arab Republic	1,891	-	Lupin Ltd. (975); Macleods Pharm. (916)
Turkmenistan	1,867	-	Lupin Ltd.
Eritrea	1,635	-	Macleods Pharm.
Georgia	1,559	-	Lupin Ltd.
Togo	1,441	-	Lupin Ltd.
Gambia	1,227	-	Lupin Ltd.

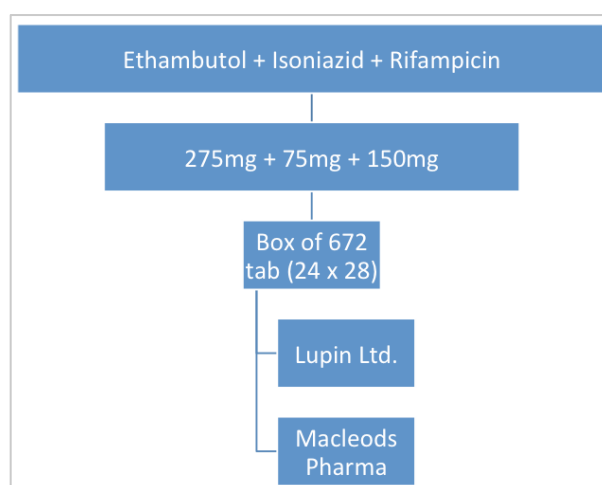
Moldova	1,100	-	Macleods Pharm.
Rwanda	1,040	-	Strides Arcolab Ltd.
Bhutan	607	-	Strides Arcolab Ltd.
Ghana	523	-	Strides Arcolab Ltd.
Mongolia	330	-	Macleods Pharm.
Azerbaijan	-	228	Lupin Ltd.
Bosnia & Herzegovina	226	-	Lupin Ltd.
West Bank & Gaza	31	-	Lupin Ltd.

Table reflects Global Fund PQR data from 2011 & 2012

Ethambutol + Isoniazid + Rifampicin – Fixed Dose Combination

Two manufacturers supplied ethambutol + isoniazid + rifampicin, FDC in 2011 and 2012 as reported in the GF-PQR. One formulation and secondary package type was purchased for orders of this product under Global Fund grants during this two-year period; 58,704 total units purchased in 2011 and 22,516 units purchased in 2012.

Figure 4: Ethambutol + Isoniazid + Rifampicin GF-PQR Supply Mapping



The value of the Global Fund financed purchases for this formulation remained relatively stable over this two-year period with a slight decrease in 2012: 2011 - \$1,099,562 and 2012 - \$1,073,338. Macleods Pharmaceuticals gained a larger share of the global fund financed market both in terms of volumes purchased and dollar value in 2012 as compared to 2011.

Figure 5: Ethambutol + Isoniazid + Rifampicin Market Share Analysis, 2012

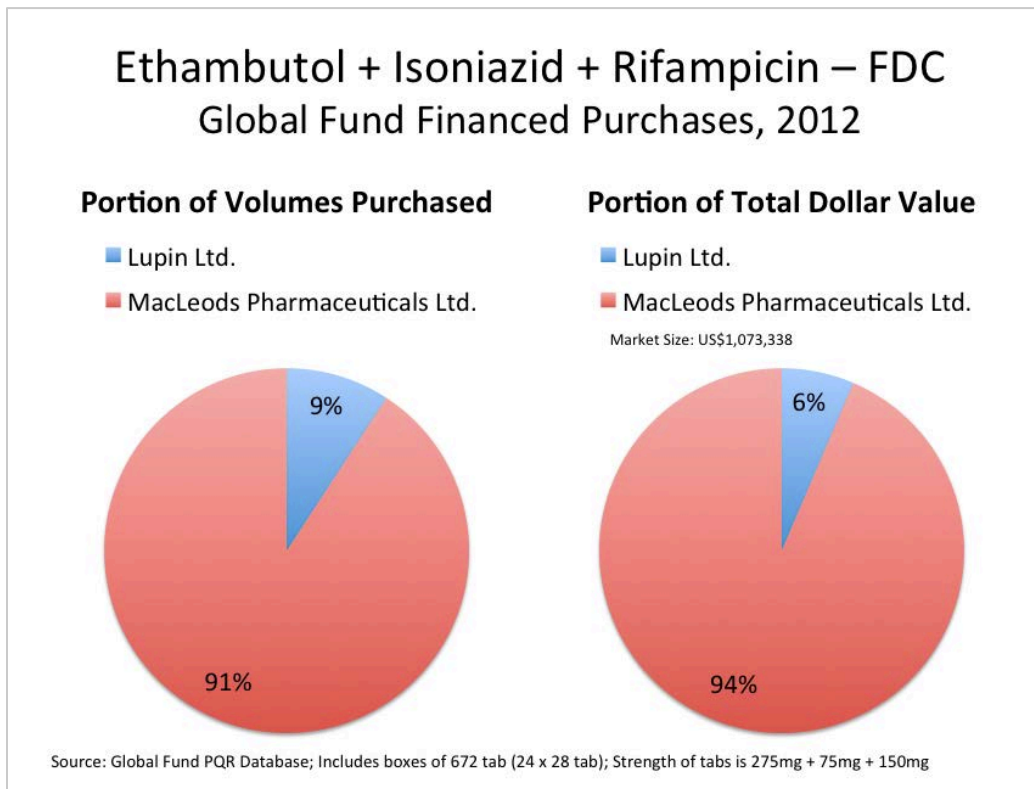
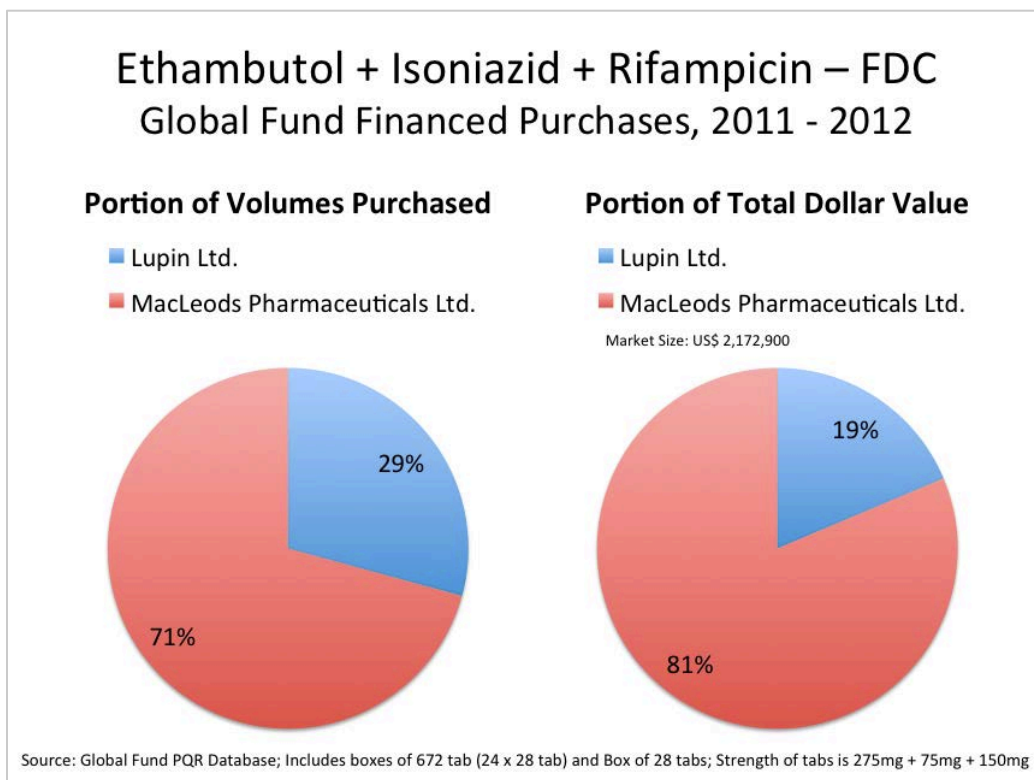


Figure 6: Ethambutol + Isoniazid + Rifampicin Market Share Analysis, 2011-2012



The largest volume of units purchased (>5,000 units) by countries under Global Fund grants were made by Zambia, Sudan, Democratic Republic of Congo and Sierra Leone. The three largest orders were made to Macleods Pharmaceuticals while the fourth largest was supplied by Lupin.

Table 4: Ethambutol + Isoniazid + Rifampicin Global Fund Purchases by Country

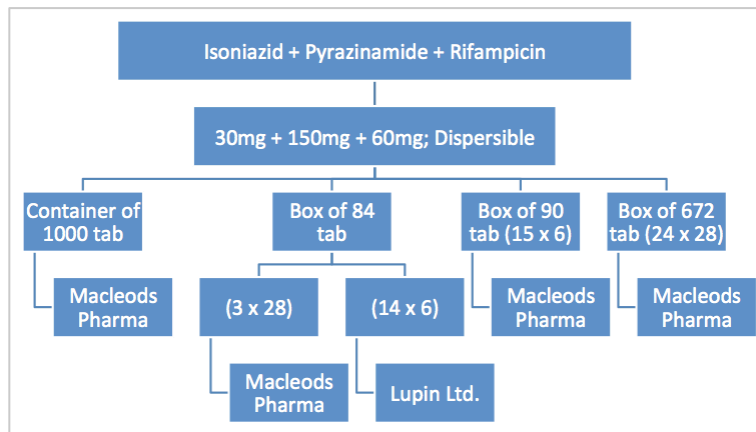
Ethambutol + Isoniazid + Rifampicin, 275mg + 75mg + 150mg, Box of 672 tab (24 x 28)		
Country	Units Purchased	Manufacturer
Zambia	8,000	Macleods Pharm.
Sudan	7,830	Macleods Pharm.
DR Congo	7,456	Macleods Pharm.
Sierra Leone	5,804	Lupin Ltd.
Myanmar	4,920	Lupin Ltd. (500); Macleods Pharm. (4,420)
Uzbekistan	3,574	Macleods Pharm.
Nepal	2,946	Lupin Ltd.
Madagascar	2,800	Macleods Pharm.
Pakistan	2,009	Lupin Ltd.
Afghanistan	1,510	Lupin Ltd.
Nigeria	1,203	Lupin Ltd. (Adjusted from Box of 28)
Uganda	1,196	Macleods Pharm.
Cote d'Ivoire	893	Lupin Ltd.
Ghana	729	Macleods Pharm.
Haiti	634	Lupin Ltd. (434); Macleods Pharm. (200)
Rwanda	400	Macleods Pharm.
Togo	372	Macleods Pharm.
South Sudan	365	Macleods Pharm.
Mongolia	330	Macleods Pharm.
Syrian Arab Republic	250	Lupin Ltd.
Eritrea	210	Macleods Pharm.
Bhutan	91	Lupin Ltd.
Somalia	20	Lupin Ltd.
West Bank & Gaza	6	Macleods Pharm.

Table reflects Global Fund PQR data from 2011 & 2012

Isoniazid + Pyrazinamide + Rifampicin – Fixed Dose Combination, Dispersible

Isoniazid +Pyrazinamide + Rifampicin, FDC dispersible was purchased from two manufacturers under Global Fund grants in 2011 and 2012 – Macleods Pharmaceuticals and Lupin. Lupin produced the formulation in one secondary package type – box of 84 tablets (14 x 6 blisters) – while Macleods Pharmaceuticals manufactured four different secondary packaging types for this FDC dispersible formulation.

Figure 7: Isoniazid + Pyrazinamide + Rifampicin GF-PQR Supply Mapping



Macleods Pharmaceuticals held the largest share of the Global Fund financed isoniazid + pyrazinamide + rifampicin, FDC dispersible market in 2011 and 2012. The value of the Global Fund financed purchases for isoniazid + pyrazinamide + rifampicin, FDC dispersible market was \$68,522 in 2011 and \$290,984 in 2012. This market increased in size in terms of volumes purchased and total dollar value, between 2011 and 2012.

Figure 8: Isoniazid + Pyrazinamide + Rifampicin Market Share Analysis, 2012

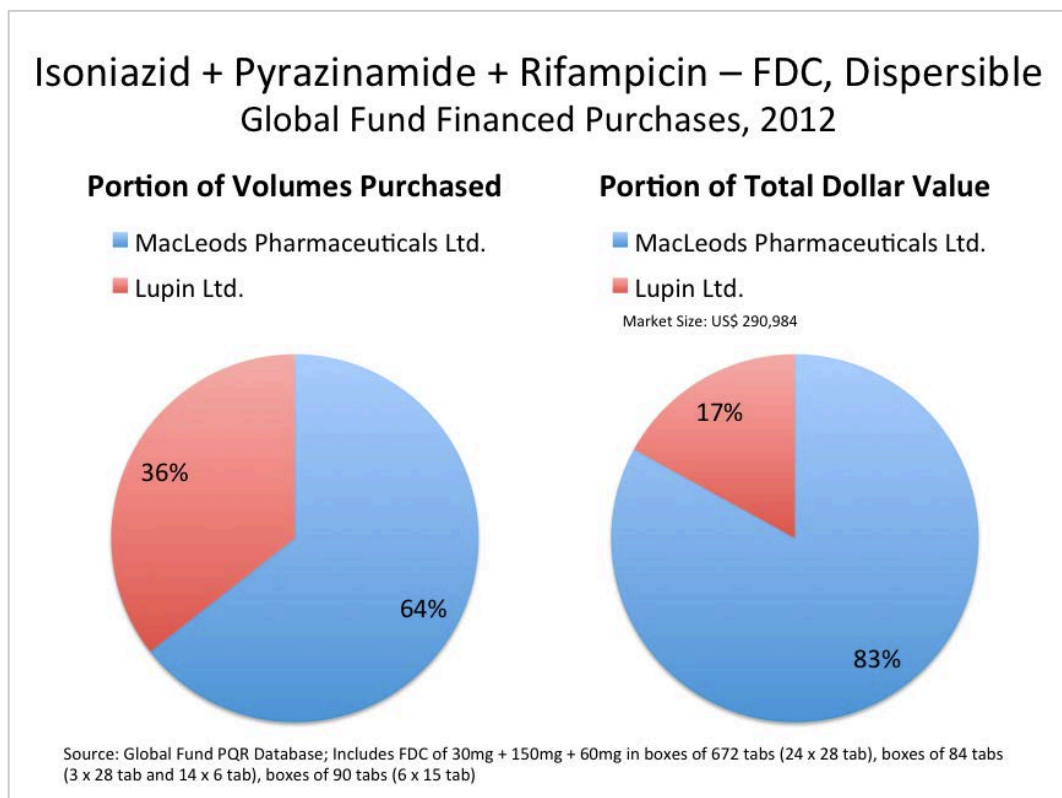
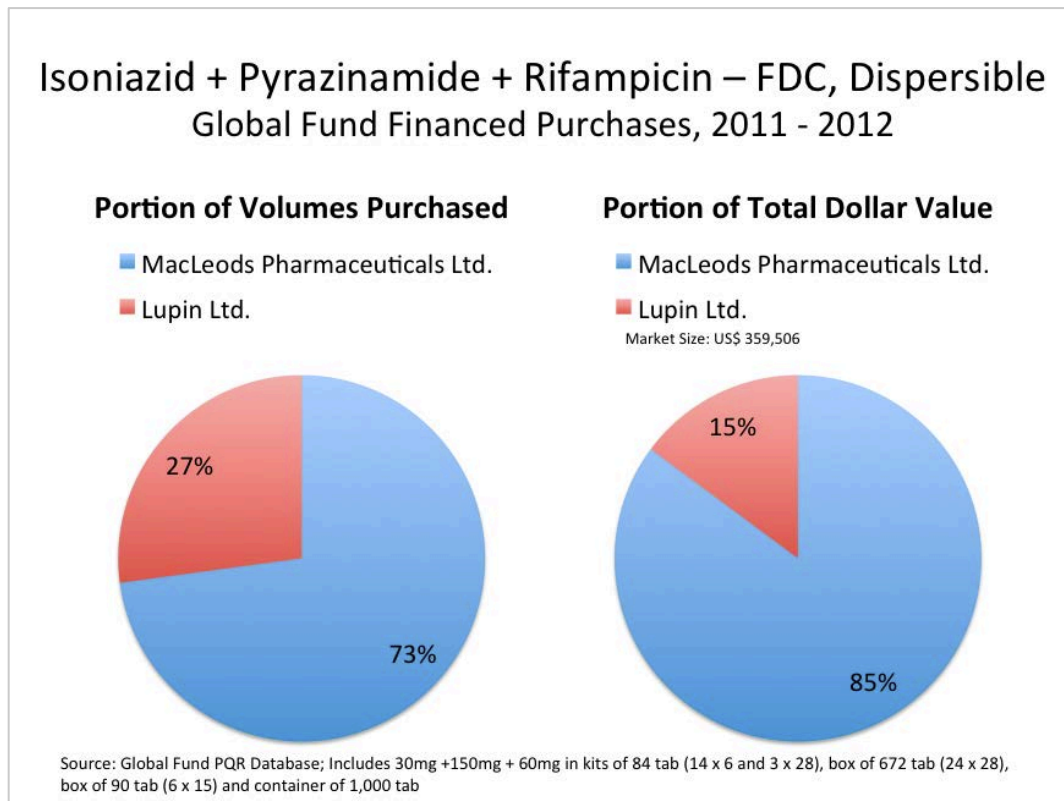


Figure 9: Isoniazid + Pyrazinamide + Rifampicin Market Share Analysis, 2011-2012



The largest purchases of isoniazid + pyrazinamide + rifampicin, FDC dispersible under Global Fund grants in 2011 and 2012 were made by the Democratic Republic of Congo, Uganda and Zambia.

Table 5: Isoniazid + Pyrazinamide + Rifampicin Global Fund Purchases by Country

Isoniazid + Pyrazinamide + Rifampicin, 30mg + 150mg + 60mg; Dispersible						
Country	Units Purchased					Manufacturer
	Box of 84 tab		Box of 90 tab (15 x 6)	Container of 1,000 tab	Box of 672 tab (24 x 28)	
	3 x 28	14 x 6				
DR Congo	-	-	21,131	1,907	-	Macleods Pharm.
Uganda	-	19,717	-	-	-	Lupin Ltd.
Zambia	-	-	14,000	-	-	Macleods Pharm.
Eritrea	650	1,608	-	-	-	Macleods Pharm. (650); Lupin Ltd. (1,608)
Cote d'Ivoire	-	1,280	-	-	-	Lupin Ltd.
Ghana	850	-	-	-	-	Macleods Pharm.
South Sudan	-	800	-	-	-	Lupin Ltd.
Rwanda	610	-	-	-	60	Macleods Pharm.
Benin	-	-	300	-	-	Macleods Pharm.
Gambia	33	178	-	-	-	Macleods Pharm. (33); Lupin Ltd. (178)
Armenia	99	-	-	-	-	Macleods Pharm.
Kosovo	-	50	-	-	-	Lupin Ltd.
West Bank and Gaza	44	-	-	-	-	Macleods Pharm.
Lao	12	-	-	-	-	Macleods Pharm.

Table reflects Global Fund PQR data from 2011 & 2012

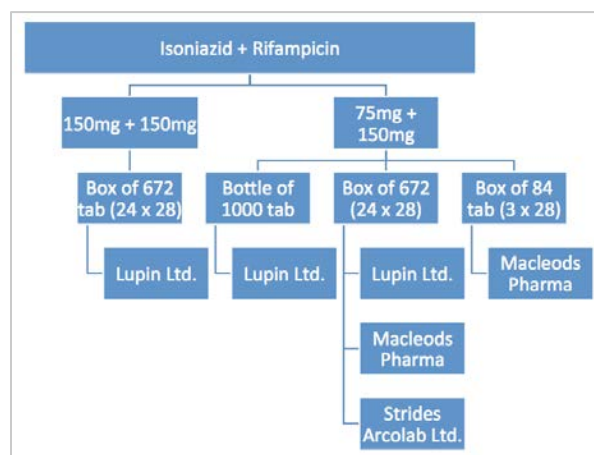
Isoniazid + Rifampicin

The market for isoniazid + rifampicin is separated by dispersible and non-dispersible products. The total market value, as reported to GF-PQR, for all isoniazid + rifampicin products was \$4,097,410 in 2011 and \$3,401,354 in 2012.

Isoniazid + Rifampicin – Fixed Dose Combination

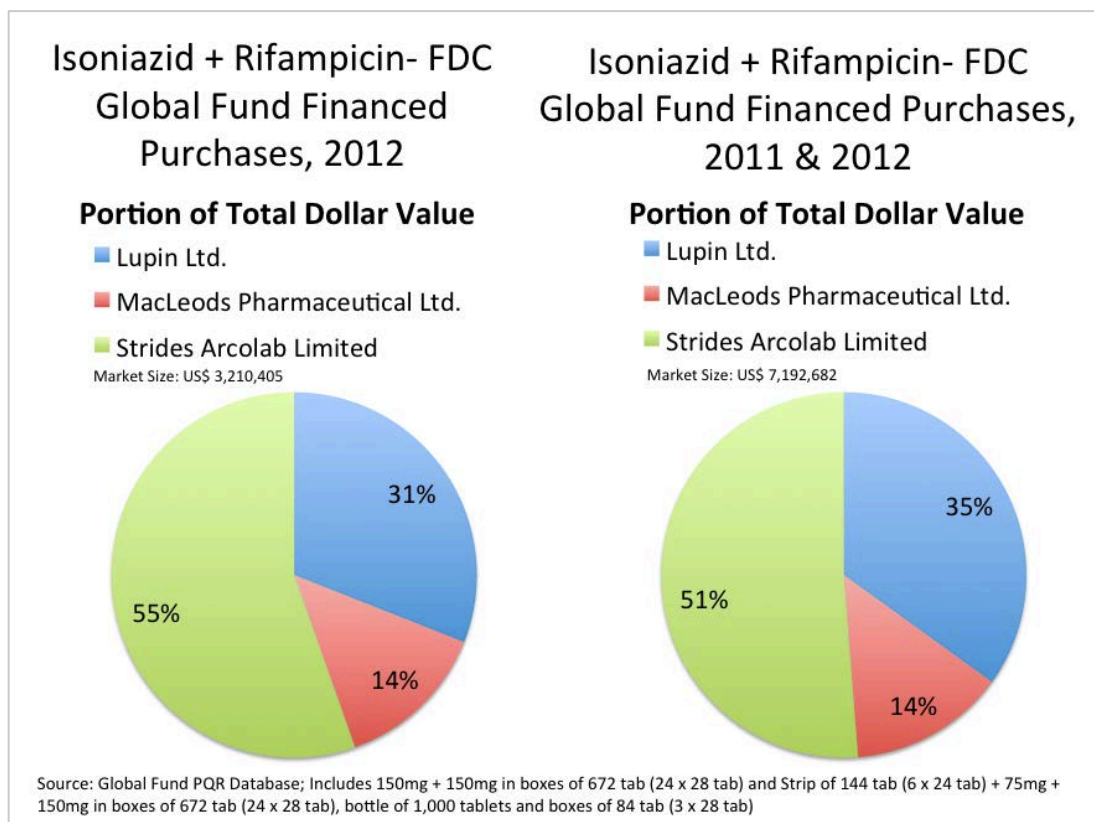
In 2011 and 2012 Isoniazid + Rifampicin, FDC was purchased under Global Fund grants in two formulations – one formulation in one secondary package type and the other formulation in three different secondary package types. Three manufacturers produced isoniazid + rifampicin, FDC for purchases under Global Fund grants including Lupin, Macleods Pharmaceuticals and Strides Arcolab.

Figure 10: Isoniazid + Rifampicin GF-PQR Supply Mapping



Volumes purchased under Global Fund grants for different FDCs could not be adjusted to a standard secondary package type/formulation and so market share analysis was done by the value of Global Fund financed purchases for isoniazid + rifampicin, FDC. This analysis revealed a relatively consistent market share for 2012 and 2011 with a slight decline in the total value of the Global Fund financed purchases in 2012. The value of the Global Fund financed purchases for this product in 2011 was \$3,982,277 while the value in 2012 was \$3,210,405.

Figure 11: Isoniazid + Rifampicin Market Share Analysis, 2012; 2011-2012



A secondary analysis of the isoniazid + rifampicin, FDC product formulation with a larger market share (75mg + 150mg) is provided separately below.

The value of Global Fund financed purchases for this formulation declined slightly between 2011 (\$3,881,048) to 2012 (\$3,024,545). The share among the three primary manufacturers remained relatively consistent with a decline in Lupin's share between 2011 and 2012 and an increase in Strides Arcolab's share between 2011 and 2012.

Figure 12: Isoniazid + Rifampicin Market Share Analysis, 2012

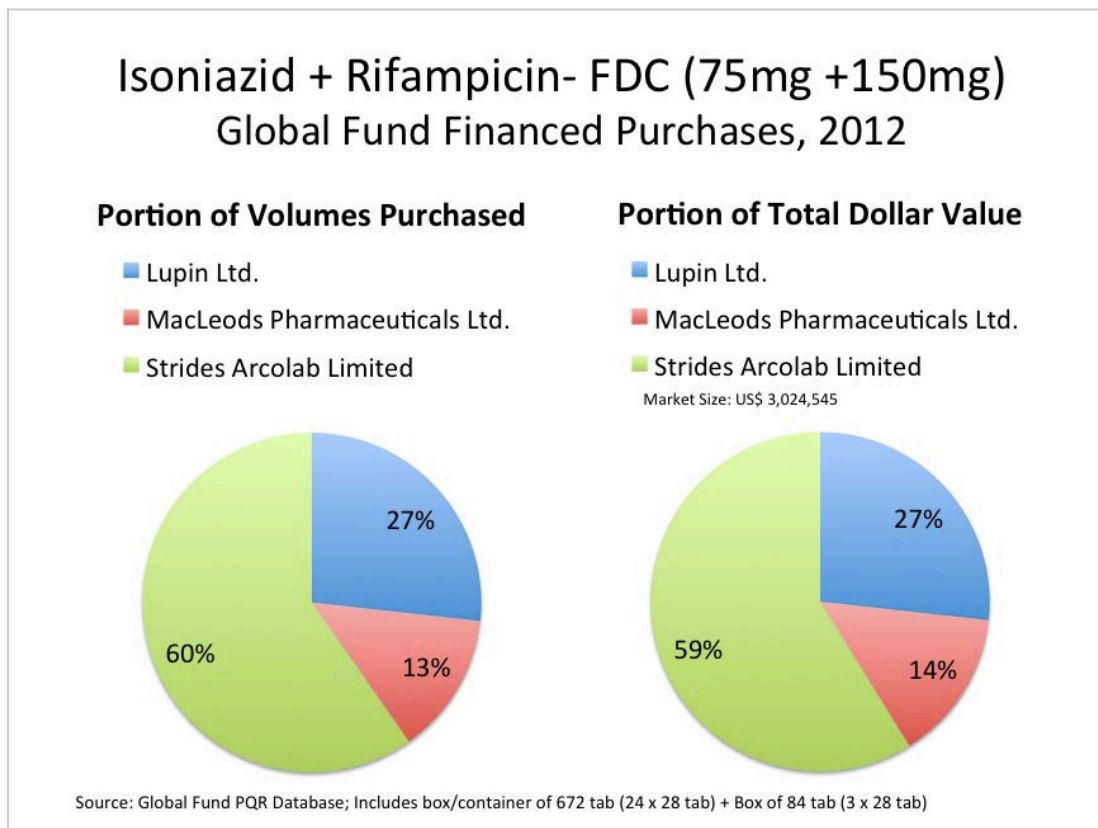
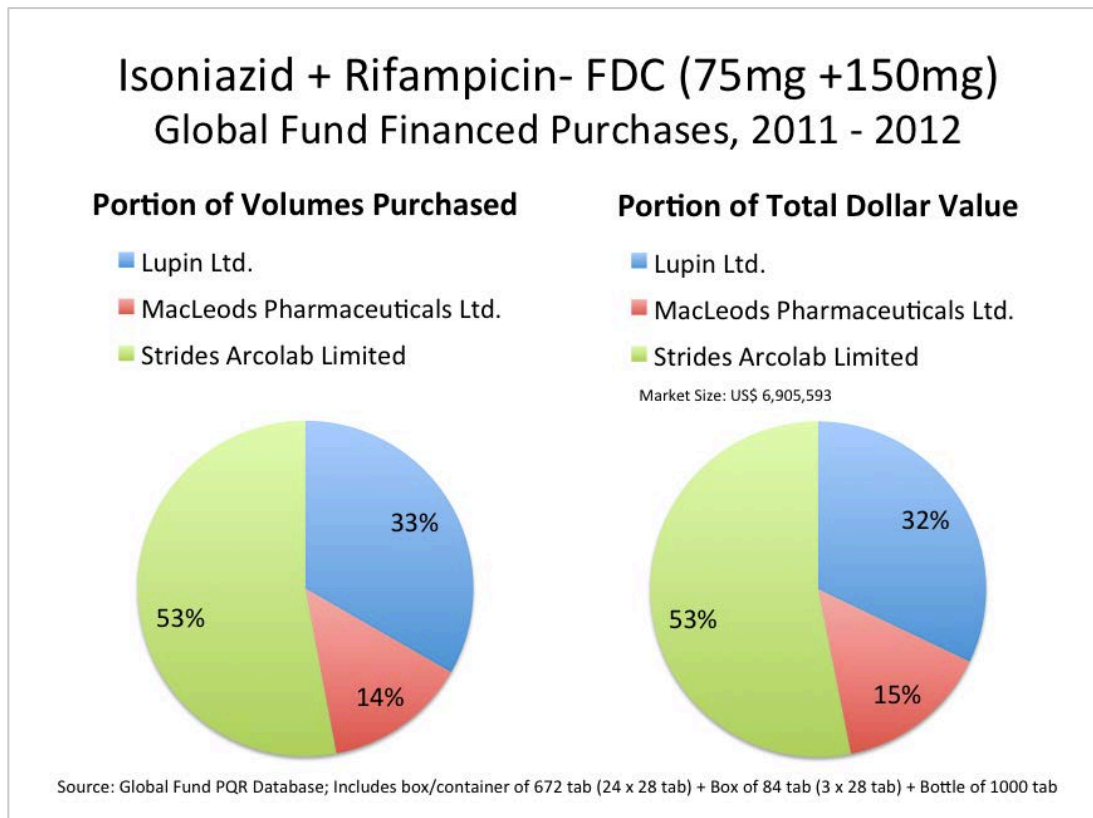


Figure 13: Isoniazid + Rifampicin Market Share Analysis, 2011-2012



The Democratic Republic of Congo and Zambia held the largest total units purchased under Global Fund grants (>60,000 units) by country. The Democratic Republic of Congo purchased the largest number of units (96,338) during this two-year period. They were the only country to purchase from all three manufacturers between 2011 and 2012.

Table 6: Isoniazid + Rifampicin Global Fund Purchases by Country

Isoniazid + Rifampicin						
Country	Units Purchased					Manufacturer
	75mg + 150mg			150mg + 150mg		
	Box of 672 tab (24 x 28)	Bottle of 1000 tab	Box of 84 tab (3 x 28)	Box of 672 tab (24 x 28)	Strip of 144 tab (6 x 24)	
DR Congo	96,338	-	-	-	-	Lupin Ltd. (44,595); Macleods Pharm. (13,523); Strides Arcolab Ltd. (38,220)
Zambia	62,500	-	-	-	-	Strides Arcolab Ltd.
Sudan	26,907	-	-	-	-	Lupin Ltd. (12,500); Macleods Pharm. (14,407)
Bangladesh	24,785	-	-	-	-	Strides Arcolab Ltd.
Cambodia	21,525	-	-	-	-	Strides Arcolab Ltd.
DPR Korea	6,963	-	-	6,668	5,060	Lupin Ltd. (11,728); Strides Arcolab Ltd. (6,963)
Somalia	12,623	-	-	-	-	Strides Arcolab Ltd.
Nepal	11,574	-	-	-	-	Strides Arcolab Ltd.
Afghanistan	10,860	-	-	-	-	Lupin Ltd.
Thailand	7,460	-	-	-	-	Lupin Ltd.
Iraq	6,480	-	-	-	-	Lupin Ltd.
Liberia	6,372	-	-	-	-	Lupin Ltd.
Moldova	6,050	-	-	-	-	Macleods Pharm.
South Sudan	6,020	-	-	-	-	Lupin Ltd.
Sri Lanka	6,000	-	-	-	-	Macleods Pharm.
Cote d'Ivoire	5,172	-	-	-	-	Strides Arcolab Ltd.
Benin	5,126	-	-	-	-	Macleods Pharm.
Haiti	4,607	-	-	-	-	Lupin Ltd.
Mozambique	4,489	-	-	-	-	Lupin Ltd.
Kyrgyzstan	1,879	-	-	2,231	-	Lupin Ltd.
Belarus	3,920	-	-	-	-	Strides Arcolab Ltd.
Eritrea	3,000	-	390	-	-	Macleods Pharm.
Togo	3,351	-	-	-	-	Lupin Ltd.
Syrian Arab Republic	2,990	-	-	-	-	Lupin Ltd. (1,540); Strides Arcolab Ltd. (1,450)
Uzbekistan	2,648	-	-	-	-	Lupin Ltd.
Bosnia & Herzegovina	2,536	-	-	-	-	Lupin Ltd.

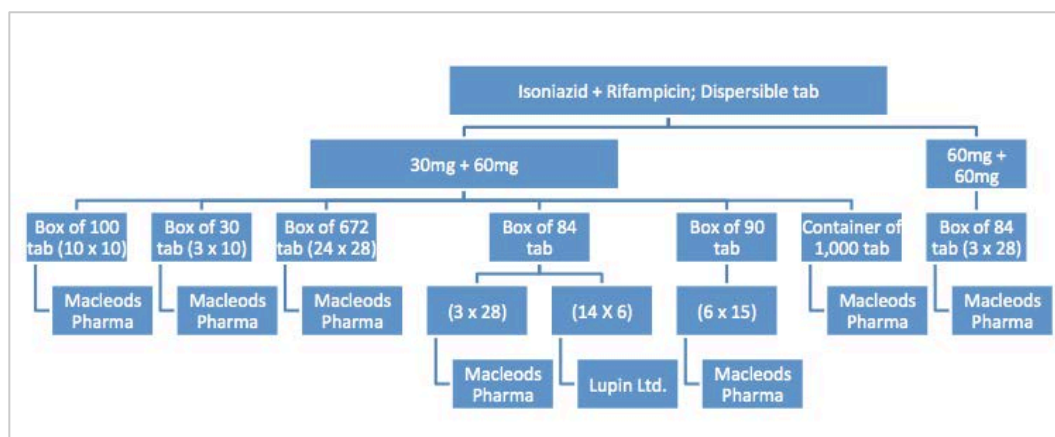
Lao	2,529	-	-	-	-	Lupin Ltd.
Armenia	2,274	-	-	-	-	Lupin Ltd.
Turkmenistan	1,817	-	-	-	-	Lupin Ltd.
Rwanda	1,590	-	-	-	-	Strides Arcolab Ltd.
Kosovo	1,576	-	-	-	-	Macleods Pharm.
Burundi	1,302	-	-	-	-	Lupin Ltd.
Bhutan	1,104	-	-	-	-	Strides Arcolab Ltd.
Gambia	-	-	-	1,040	-	Lupin Ltd.
Timor-Leste	770	-	-	-	-	Macleods Pharm. (200); Strides Arcolab Ltd. (570)
Azerbaijan	-	372	-	-	-	Lupin Ltd.
Ghana	70	-	-	-	-	Strides Arcolab Ltd.
West Bank & Gaza	50	-	-	-	-	Strides Arcolab Ltd.

Table reflects Global Fund PQR data from 2011 & 2012

Isoniazid + Rifampicin – Fixed Dose Combination, Dispersible

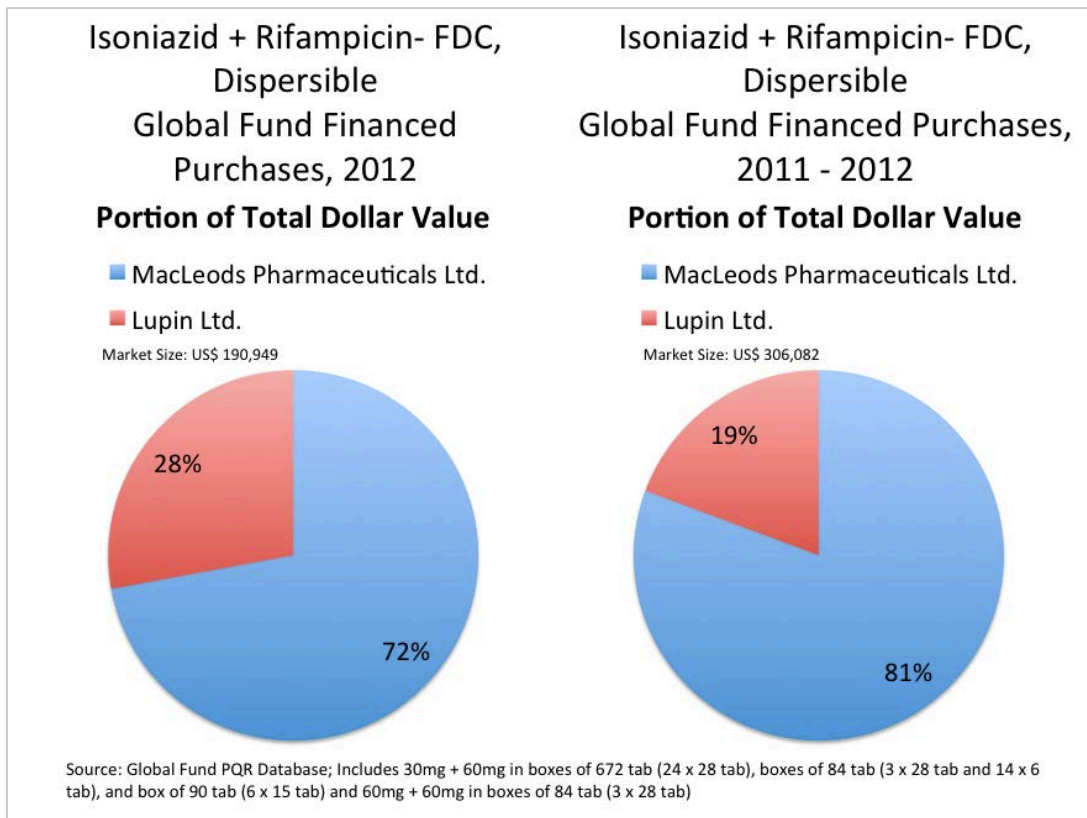
Two FDC dispersible formulations of isoniazid + rifampicin were reported in the GF-PQR for 2011 and 2012. The majority of secondary packaging variations were for one formulation – 30mg + 60mg. Macleods Pharmaceutical produced both formulations of this FDC dispersible product in all but one of the secondary package types. Lupin produced one formulation (30mg + 60mg) in a box of 84 tablets (14 x 6 blisters).

Figure 14: Isoniazid + Rifampicin (Dispersible) GF-PQR Supply Mapping



Volumes purchased under Global Fund grants for different dispersible FDCs could not be adjusted to a standard secondary package type/formulation and so this analysis examined the total value of Global Fund financed purchases and share held by each supplier as captured in the GF-PQR. For both dispersible formulation types, the value of the Global Fund financed purchases increased from 2011 (\$115,133) to 2012 (\$190,949). Macleods Pharmaceuticals held the majority of the market in terms of dollar value for both dispersible FDC formulations.

Figure 15: Isoniazid + Rifampicin (Dispersible) Market Share Analysis, 2012; 2011-2012



A separate analysis of the larger volume dispersible FDC formulation (30mg + 60mg) was also produced with breakdowns by volumes purchased and market share. For isoniazid + rifampicin, FDC dispersible in formulations of 30mg+ 60mg, the market distribution based on volumes purchased under Global Fund grants was more evenly distributed. Macleods Pharmaceuticals held a larger share of the total value of the Global Fund financed market for isoniazid + rifampicin, FDC dispersible than Lupin.

Figure 16: Isoniazid + Rifampicin (Dispersible) Market Share Analysis, 2012

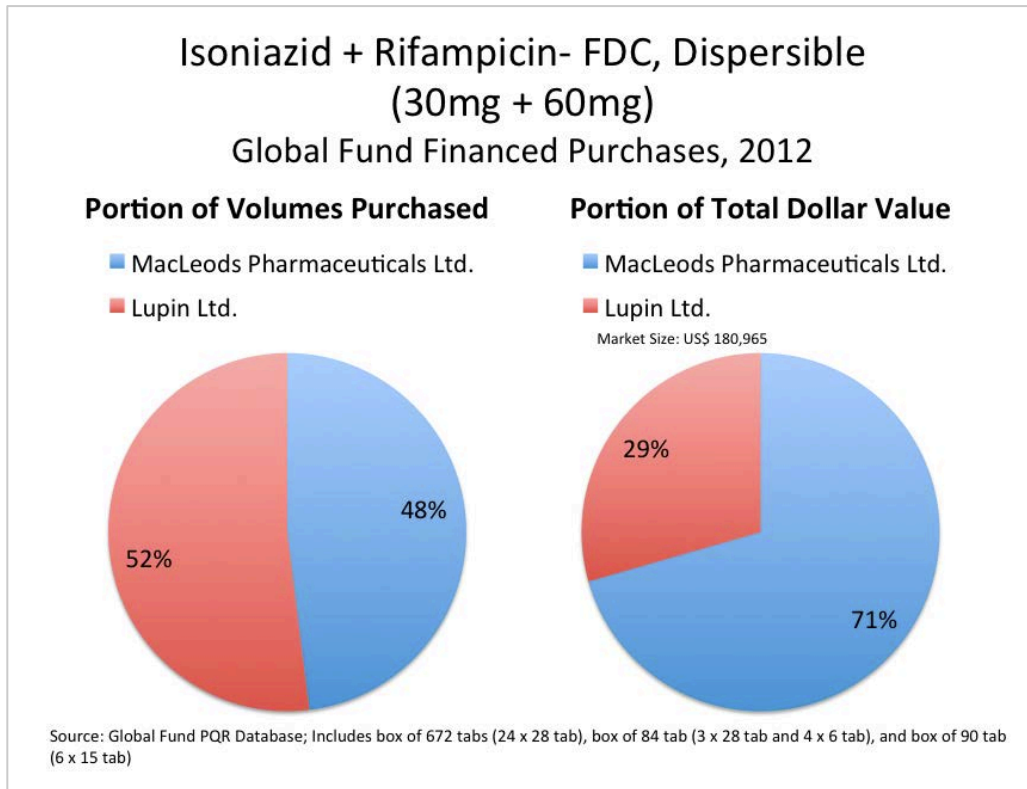
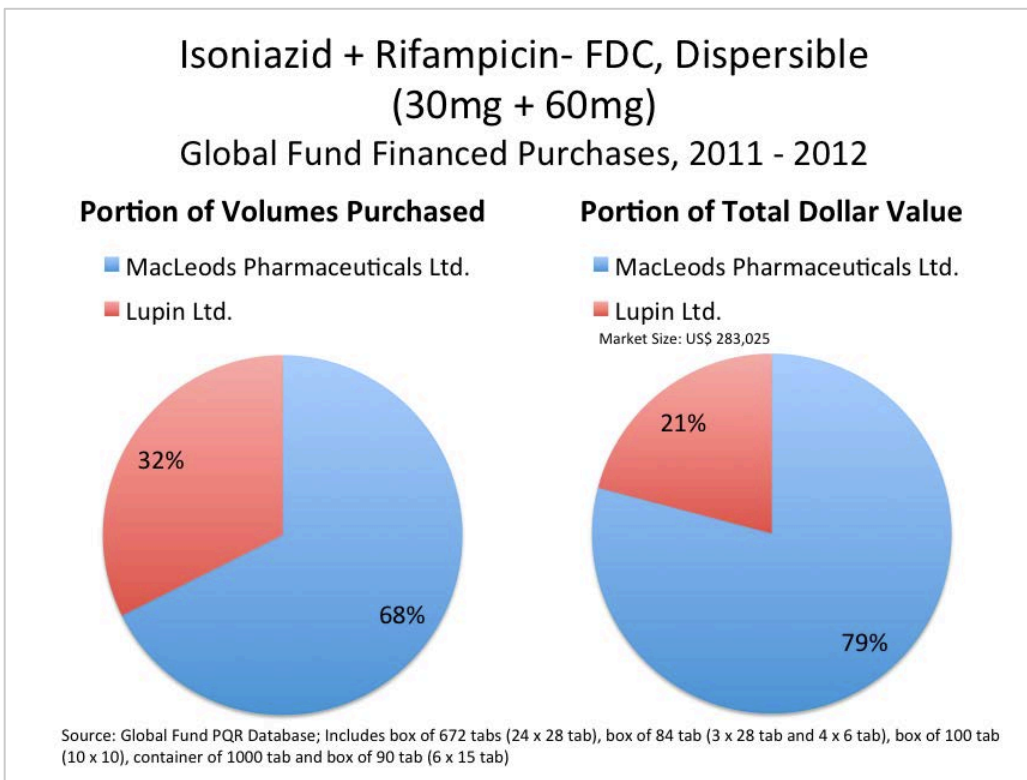


Figure 17: Isoniazid + Rifampicin (Dispersible) Market Share Analysis, 2011-2012



The two largest purchases of isoniazid + rifampicin, FDC dispersible according to the GF-PQR were made for Uganda (29,293 units) and Zambia (27,000 units).

Table 7: Isoniazid + Rifampicin (Dispersible) Global Fund Purchases by Country

Isoniazid + Rifampicin, Dispersible								
Country	Units Purchased							Manufacturer
	30mg + 60mg						60mg + 60mg	
	Box of 84 tab (3 x 28)	Box of 84 tab (14 x 6)	Box of 90 tab (6 x 15)	Box of 100 tab (10 x 10)	Box of 672 tab (24 x 28)	Container of 1000 tab	Box of 84 tab (3 x 28)	
Uganda	-	29,293	-	-	-	-	-	Lupin Ltd.
Zambia	-	-	27,000	-	-	-	-	Macleods Pharm.
Rwanda	5,125	-	-	-	120	-	-	Macleods Pharm.
Ghana	1,700	-	-	-	-	-	2,900	Macleods Pharm.
Eritrea	910	3,215	-	-	-	-	-	Lupin Ltd. (3,215); Macleods Pharm. (910)
DR Congo	-	-	-	-	-	3,813	-	Macleods Pharm.
South Sudan	-	3,200	-	-	-	-	-	Lupin Ltd.
Cote d'Ivoire	-	3,175	-	-	-	-	-	Lupin Ltd.
Liberia	-	-	-	1,330	-	-	-	Macleods Pharm.
Benin	-	-	600	-	-	-	-	Macleods Pharm.
Armenia	188	-	-	-	-	-	452	Macleods Pharm.
Kosovo	-	94	-	-	-	-	285	Lupin Ltd. (94); Macleods Pharm. (285)
Lao	25	-	-	-	-	-	10	Macleods Pharm.
Gambia	-	-	-	-	-	-	34	Macleods Pharm.

Table reflects Global Fund PQR data from 2011 & 2012

Second-Line Drugs

Injectables Agents

Amikacin

In 2011 and 2012, 254,666 units (i.e., boxes of 10 vials) of amikacin (500mg/2ml) were purchased from a single supplier, Medochemie, under Global Fund grants. 191,778 units were purchased under Global Fund grants in 2011 while 62,888 units were purchased in 2012. The value of Global Fund financed purchases for this formulation in 2011 was \$2,327,250 and in 2012 it was \$671,973.

China, Kazakhstan, Moldova and Azerbaijan placed the largest orders (>30,000 units) for amikacin between 2011 and 2012.

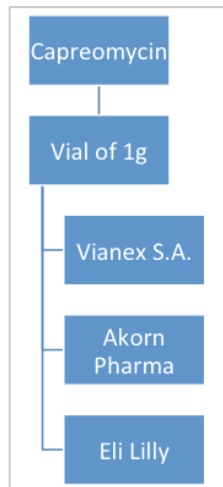
Table 8: Amikacin Global Fund Purchases by Country

Amikacin, 500mg/2ml, Box of 10 vials		
Country	Units Purchased	Manufacturer
China	73,530	Medochemie
Kazakhstan	40,116	Medochemie
Moldova	37,904	Medochemie
Azerbaijan	32,109	Medochemie
Tajikistan	25,450	Medochemie
Myanmar	19,800	Medochemie
Pakistan	9,798	Medochemie
Iraq	3,804	Medochemie
Kyrgyzstan	3,467	Medochemie
DPR Korea	3,000	Medochemie
Senegal	2,898	Medochemie
Bulgaria	2,610	Medochemie
Bolivia	180	Medochemie

Table reflects Global Fund PQR data from 2011 & 2012

Capreomycin

Figure 18: Capreomycin GF-PQR Supply Mapping



In 2011 and 2012, Capreomycin was purchased under Global Fund grants in 1g powder vials from three manufacturers: Vianex, Akorn Pharma and Eli Lilly. Eli Lilly transferred their technology to produce capreomycin to other manufacturers. It should be noted that Eli Lilly has exited the capreomycin market and any remaining purchase orders reflected in this analysis represent residual orders in the system.

The value of the Global Fund financed purchases for this formulation for 2011 was \$8,046,608. In 2012, the value was \$5,169,567. The total units (vials of 1g) purchased across manufacturers in 2011 were 595,213 units. In 2012, the total units purchased were 855,473 units.

Figure 19: Capreomycin Market Share Analysis, 2012

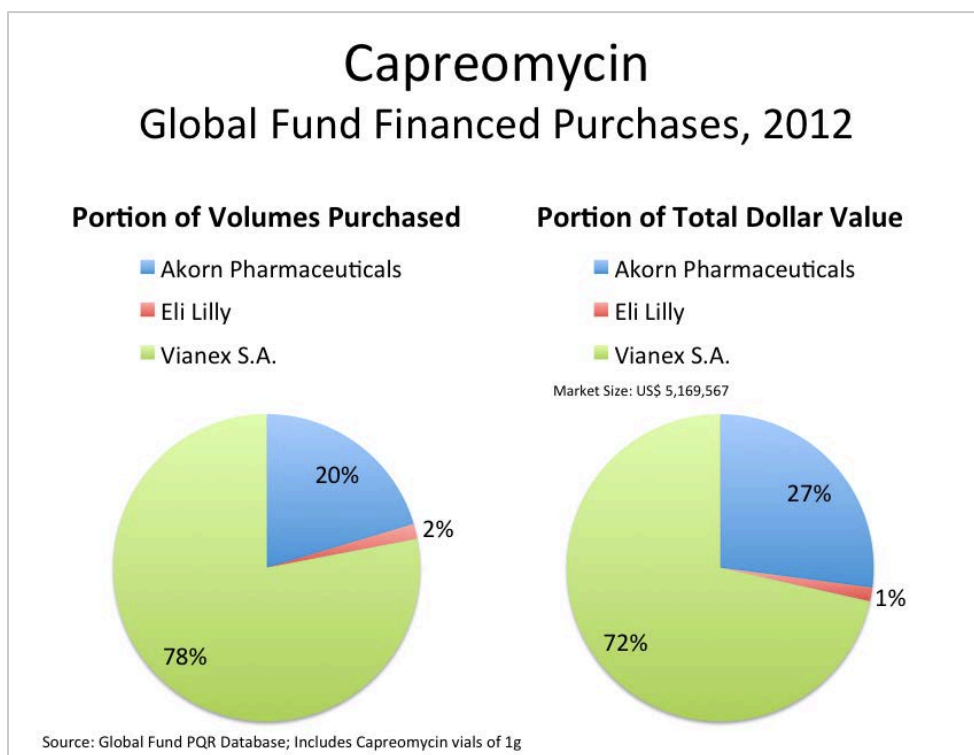
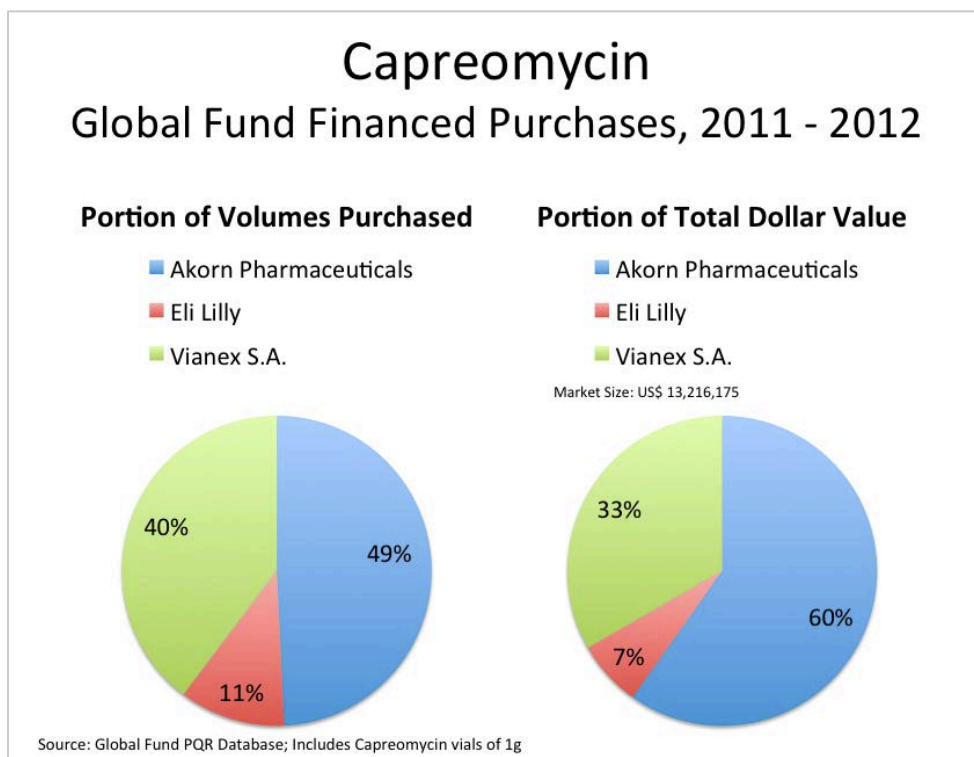


Figure 20: Capreomycin Market Share Analysis, 2011-2012



The largest orders of capreomycin (>300,000 units) were placed by Kazakhstan, Uzbekistan and China, each purchasing from all three of the supplying manufacturers between 2011 and 2012.

Table 9: Capreomycin Global Fund Purchases by Country

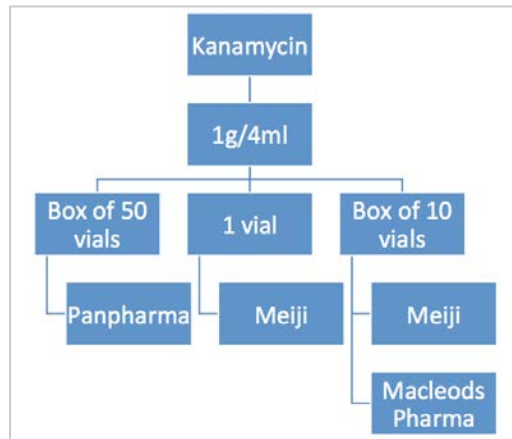
Capreomycin, 1g Powder, Vial of 1g		
Country	Units Purchased	Manufacturer
Kazakhstan	430,020	Akorn Pharma (78,269); Eli Lilly (66,631); Vianex S.A. (285,120)
Uzbekistan	361,748	Akorn Pharm. (144,596); Vianex S.A. (203,580); Eli Lilly (13,572)
China	337,552	Akorn Pharm. (279,816); Eli Lilly (57,736)
Belarus	167,344	Akorn Pharm. (141,050); Vianex S.A. (26,294)
Azerbaijan	128,384	Akorn Pharm. (14,765); Eli Lilly (53,679); Vianex SA (59,940)
Georgia	110,870	Akorn Pharm.
Moldova	80,360	Akorn Pharma (65,660); Vianex S.A. (14,700)
Ukraine	72,000	Vianex S.A.
Philippines	51,580	Akorn Pharm. (8,372); Vianex S.A. (43,208)
Kyrgyzstan	38,984	Vianex S.A.
Ethiopia	31,814	Akorn Pharm. (31,814)
Vietnam	26,074	Vianex S.A.
Tajikistan	23,640	Akorn Pharm. (18,000); Eli Lilly (5,640)
Lesotho	22,620	Akorn Pharma.
Armenia	20,000	Akorn Pharma.
Haiti	16,623	Vianex S.A.
Mongolia	16,200	Akorn Pharma.
Pakistan	8,400	Akorn Pharma.
Uganda	8,320	Akorn Pharm.
Iraq	7,500	Akorn Pharma (3,000); Eli Lilly (4,500)
Nepal	6,720	Akorn Pharma.
Indonesia	5,815	Eli Lilly
Tanzania	3,600	Vianex S.A.
Zambia	3,600	Vianex S.A.
Morocco	2,760	Vianex S.A.
Thailand	2,520	Akorn Pharm.
Serbia	2,500	Akorn Pharm.
Sudan	2,400	Akorn Pharm.
Cambodia	2,340	Akorn Pharm. (540); Vianex S.A. (1,800)
Myanmar	1,800	Vianex S.A.
Multi-country Western Pacific	1,440	Akorn Pharma (720); Eli Lilly (720)
Syrian Arab Rep.	1,400	Vianex S.A. (840); Akorn Pharm. (560)
Bosnia & Herzegovina	1,260	Vianex S.A.
Kosovo	1,015	Vianex S.A.
Guatemala	360	Eli Lilly
Paraguay	184	Akorn Pharma.

Table reflects Global Fund PQR data from 2011 & 2012

Kanamycin

In 2011 and 2012, 1g/4ml vials of kanamycin were purchased under Global Fund grants in boxes of 10 vials, boxes of 50 vials and in 1 vial package types. During this time kanamycin was purchased from a three suppliers, Meiji Pharmaceuticals, Macleods Pharmaceuticals and Panpharma.

Figure 18: Kanamycin GF-PQR Supply Mapping



In 2011 and 2012, Meiji produced the majority of kanamycin for orders reported to the GF-PQR database. The value of the Global Fund financed purchases for kanamycin was \$3,717,943 in 2011 as compared to \$1,089,268 in 2012.

Figure 19: Kanamycin Market Share Analysis, 2012

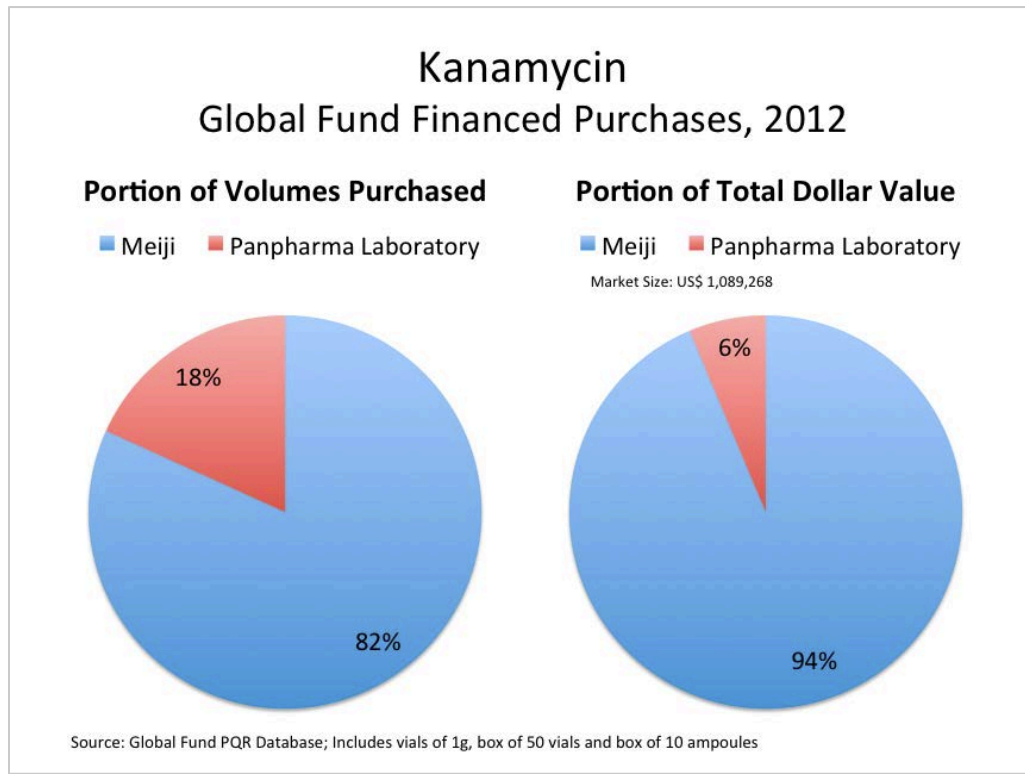
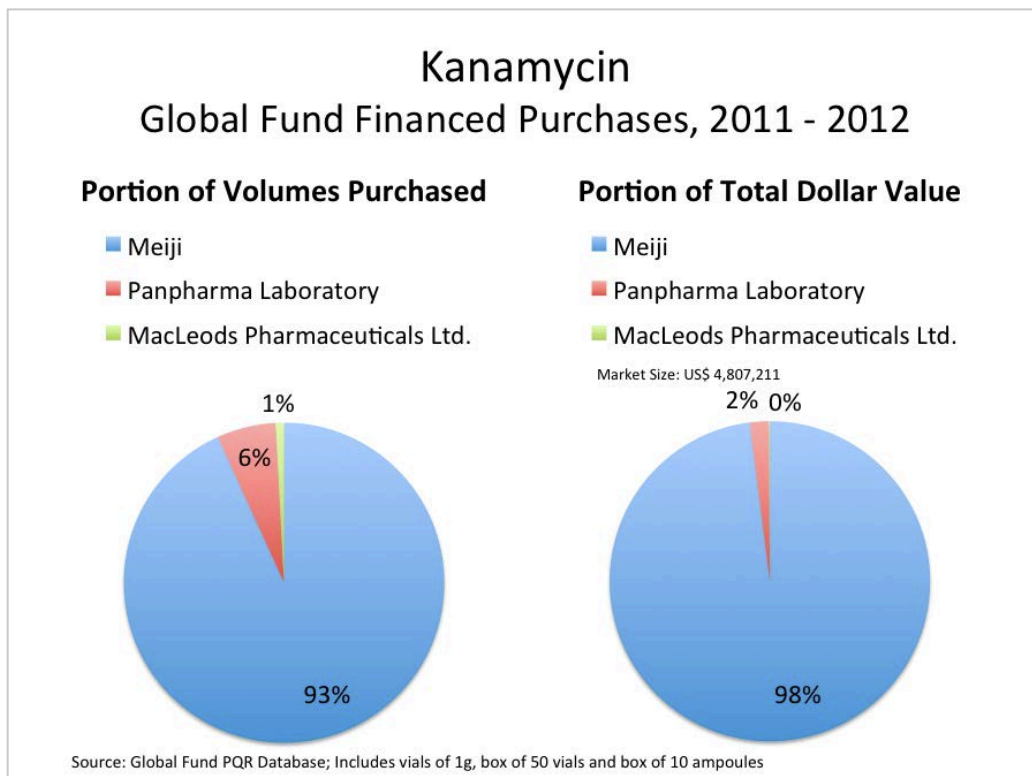


Figure 20: Kanamycin Market Share Analysis, 2011-2012



In 2011 and 2012, the Philippines (73,871 units), Vietnam (26,163 units), Zambia (14,400 units) and Georgia (13,808 units) placed the largest orders of Kanamycin under Global Fund grants. The most popular secondary package sizes purchased by countries were boxes of 10 vials.

Table 10: Kanamycin Global Fund Purchases by Country

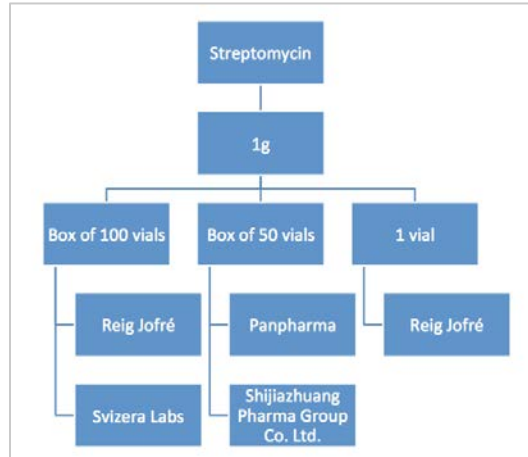
Kanamycin, 1g/4ml				
Country	Units Purchased			Manufacturer
	Box of 10 vials	1 vial	Box of 50 vials	
Philippines	73,871	-	410	Meiji (73,871); Panpharma (410)
Vietnam	26,163	-	-	Meiji
Zambia	-	14,400	-	Meiji
Georgia	12,678	-	1,130	Meiji (12,678); Panpharma (1,130)
Uzbekistan	11,207	-	-	Meiji
Uganda	7,488	-	-	Meiji
Ukraine	7,200	-	-	Meiji
Kyrgyzstan	-	6,500	597	Panpharma
Haiti	6,642	-	-	Meiji
Lesotho	6,243	-	-	Meiji
Nigeria	4,650	-	-	Meiji
DR Congo	3,910	-	-	Meiji
Sudan	3,050	-	-	Meiji
Thailand	2,340	-	-	Meiji
Cambodia	2,142	-	-	Meiji
Armenia	1,955	-	-	Meiji
Indonesia	1,400	-	-	Meiji
Rwanda	1,300	-	-	Meiji
Bangladesh	1,200	-	-	Meiji
Myanmar	900	-	-	Meiji
Syrian Arab Republic	884	-	-	Meiji
Madagascar	810	-	-	Meiji
Guatemala	790	-	-	Meiji
Tajikistan	540	-	-	Meiji
Tanzania	420	-	-	Meiji
Bhutan	360	-	-	Meiji
Multicountry Western Pacific	340	-	-	Meiji
Bolivia	297	-	-	Meiji
Nicaragua	180	-	36	Meiji (180); Panpharma (36)
El Salvador	171	-	-	Meiji
Ethiopia	168	-	-	Meiji
Lao	166	-	-	Macleods Pharm.
Dominican Republic	80	-	-	Meiji
Paraguay	46	-	-	Meiji

Table reflects Global Fund PQR data from 2011 & 2012

Streptomycin

In 2011 and 2012, streptomycin (1g vial) was purchased in three different secondary package types under Global Fund grants. Four manufacturers produced streptomycin for purchases under Global Fund grants during this two-year period.

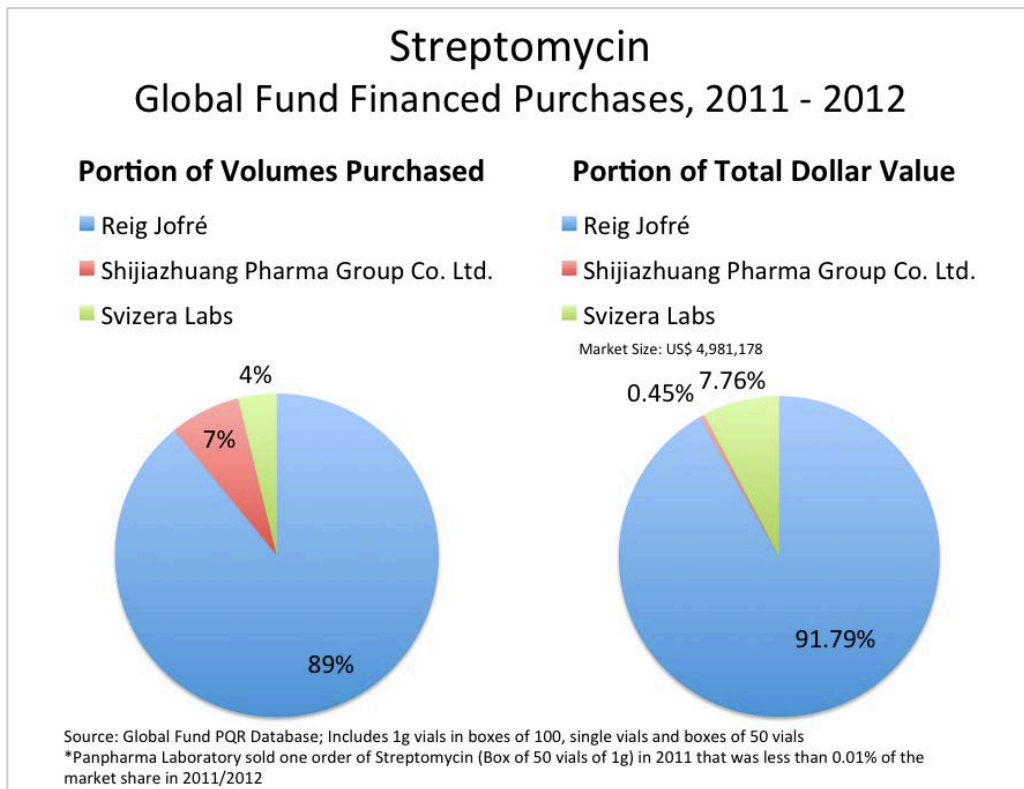
Figure 21: Streptomycin GF-PQR Supply Mapping



In 2011, Reig Jofré supplied 104,674 units of streptomycin in boxes of 100 vials and single vials of 1g. In addition to Reig Jofré, Shijiazhuang Pharma Group supplied 5,820 units in boxes of 50 vials and Svizera Labs supplied 5,274 units in boxes of 100 vials.

In 2012, Reig Jofré and Panpharma supplied streptomycin under Global Fund financed purchases. Reig Jofré supplied 24,056 units of streptomycin in boxes of 100 vials while Panpharma supplied 10 units in boxes of 50 vials. The value of the Global Fund financed purchases for streptomycin was \$3,323,677 in 2011 and \$1,657,501 in 2012.

Figure 22: Streptomycin Market Share Analysis, 2011-2012



Many of the streptomycin orders placed under Global Fund grants during 2011 and 2012 were for boxes of 100 vials. However, Sri Lanka purchased the largest total number of units (62,500 units) for single vials produced by Reig Jofré. Reig Jofré's typical packaging for streptomycin orders is boxes of 100 vials. It is possible, however unconfirmed, that the entry for single vials produced by Reig Jofré was misreported to the GF-PQR database.

Table 11: Streptomycin Global Fund Purchases by Country

Streptomycin, 1g for Injection				
Country	Units Purchased			Manufacturer
	1 vial	Box of 50 vials	Box of 100 vials	
Sri Lanka	62500	-	-	Reig Jofré
DPR Korea	-	-	20255	Reig Jofré (16055); Svizera Labs (4200)
Zambia	-	-	10001	Reig Jofré
Ethiopia	-	5820	-	Shijiazhuang Pharma Group Co. Ltd.
Bangladesh	-	-	5085	Reig Jofré
Uzbekistan	-	-	4901	Reig Jofré
Sudan	-	-	4108	Reig Jofré
Myanmar	-	-	3961	Reig Jofré
DR Congo	-	-	3607	Reig Jofré
Zimbabwe	-	-	2880	Reig Jofré
Nepal	-	-	2303	Reig Jofré
Pakistan	-	-	1800	Reig Jofré
Afghanistan	-	-	1780	Reig Jofré
Cambodia	-	-	1449	Reig Jofré
Cote d'Ivoire	-	-	1074	Svizera Labs
Kyrgyzstan	-	-	879	Reig Jofré
Thailand	-	-	815	Reig Jofré
Moldova	-	-	760	Reig Jofré
Ghana	-	-	750	Reig Jofré
Madagascar	-	-	558	Reig Jofré
Sierra Leone	-	-	555	Reig Jofré
Mongolia	-	-	493	Reig Jofré
South Sudan	-	-	473	Reig Jofré
Azerbaijan	-	-	390	Reig Jofré
Turkmenistan	-	-	339	Reig Jofré
Syrian Arab Republic	-	-	322	Reig Jofré
Togo	-	-	290	Reig Jofré
Eritrea	-	-	226	Reig Jofré
Armenia	-	-	204	Reig Jofré
Rwanda	-	-	190	Reig Jofré
Haiti	-	-	186	Reig Jofré
Lao	-	-	159	Reig Jofré
Kosovo	-	-	122	Reig Jofré
Bhutan	-	-	82	Reig Jofré
Timor-Leste	-	-	80	Reig Jofré
Bosnia & Herzegovina	-	-	70	Reig Jofré
West Bank & Gaza	-	10	-	Panpharma Laboratory

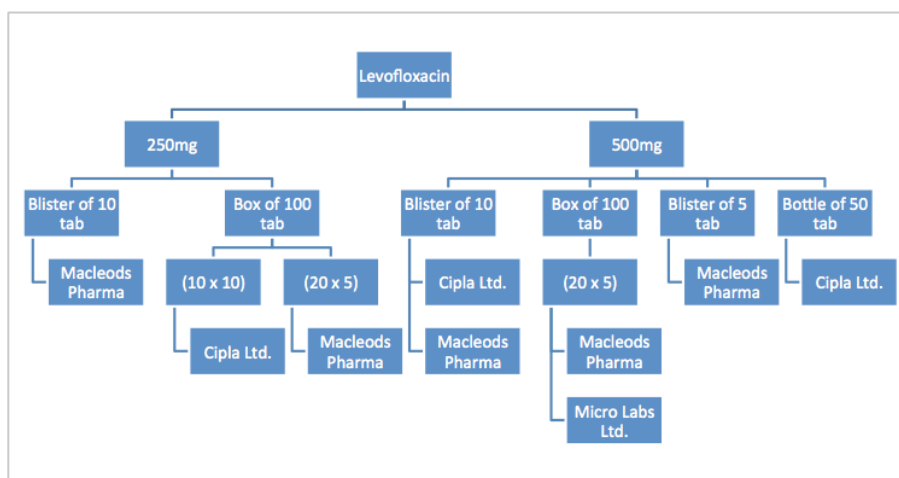
Table reflects Global Fund PQR data from 2011 & 2012

Fluoroquinolones

Levofloxacin

Under Global Fund grants in 2011 and 2012, levofloxacin was purchased in two formulation types each with multiple secondary packaging types. 250mg tablets of Levofloxacin were purchased in blisters of 10 tablets and boxes of 100 tablets. 500mg tablets of Levofloxacin were purchased in blisters of 10 tablets, boxes of 100 tablets, blisters of 5 tablets and bottles of 50 tablets. In 2011 and 2012 there were three primary suppliers from which levofloxacin was purchased under Global Fund grants.

Figure 23: Levofloxacin GF-PQR Supply Mapping



Cipla and Macleods Pharmaceuticals were the two primary sources of levofloxacin in 2011 and 2012. The larger share of both volume and dollar value switched between Macleods Pharmaceuticals in 2011 to Cipla in 2012. In addition, Micro Labs held a small share of this product market in 2011 whereas no purchases were made from Micro Labs in 2012. The value of the Global Fund financed purchases for levofloxacin was \$983,564 in 2011 and \$387,087 in 2012.

Figure 27: Levofloxacin Market Share Analysis, 2012

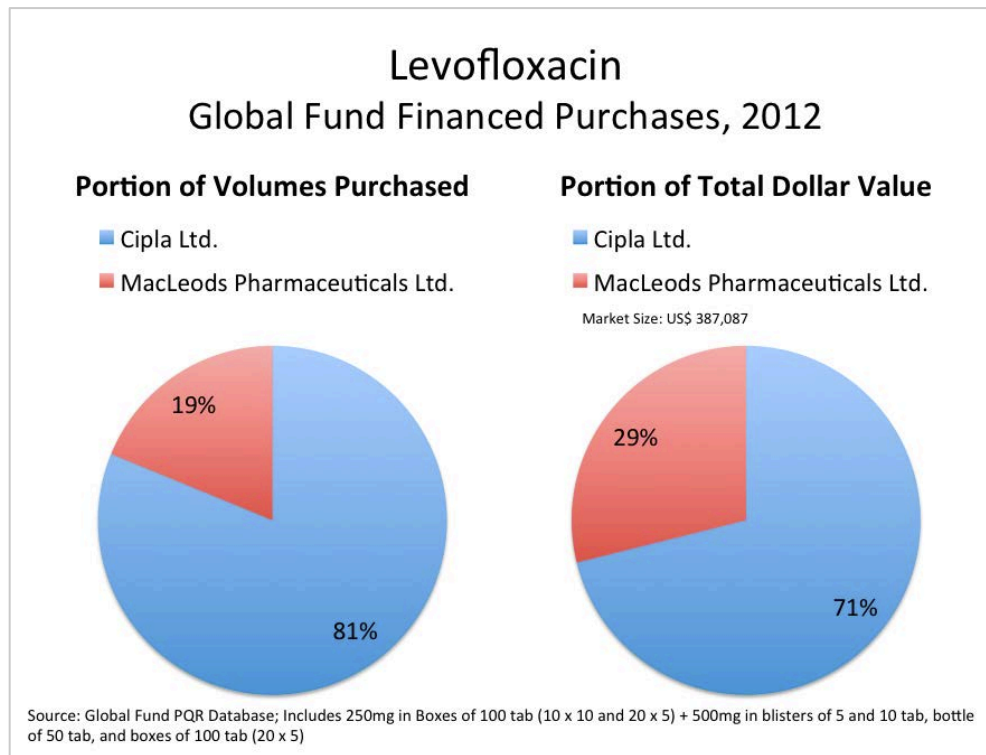
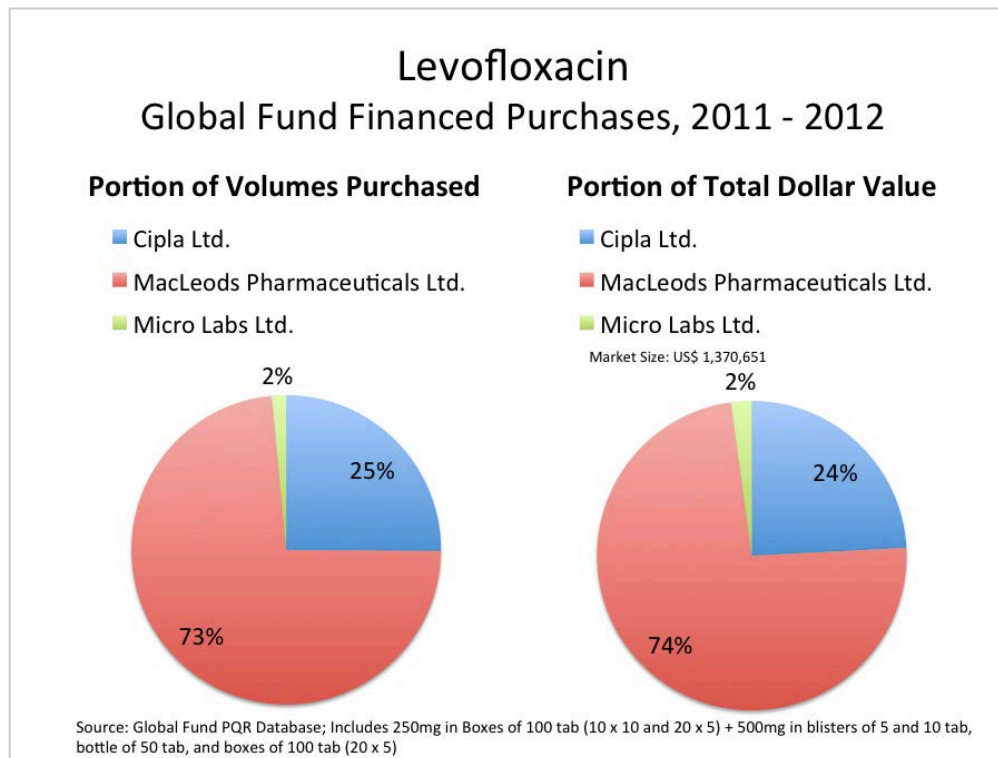


Figure 28: Levofloxacin Market Share Analysis, 2011-2012



China purchased the largest total units (>40,000 units) of levofloxacin under Global Fund grants during 2011-2012. A majority of country orders were for 250mg levofloxacin in two different secondary package types from two different manufacturers. This trend is illustrated in the table below.

Table 12: Levofloxacin Global Fund Purchases by Country

Levofloxacin, 250mg & 500mg							
Country	Units Purchased						Manufacturer
	250mg		500mg				
	Box of 100 tab		Blister of 5 tab	Blister of 10 tab	Box of 100 tab (20 x 5)	Bottle of 50 tab	
	10 x 10	20 x 5					
China	-	41,922	-	-	-	-	Macleods Pharm.
Uzbekistan	18,674	19,169	-	-	-	-	Cipla Ltd. (18,674); Macleods Pharm. (19,169)
Philippines	-	13,911	-	-	13,559	-	Macleods Pharm. (23,018); Micro Lab Ltd. (4,452)
Kazakhstan	11,520	10,217	-	-	-	-	Cipla Ltd. (11,520); Macleods Pharm. (10,217)
Russian Federation	-	-	20,268	-	-	-	Macleods Pharm.
Vietnam	-	19,145	-	-	-	-	Macleods Pharm.
Moldova	11,240	5,343	-	-	-	-	Cipla Ltd. (11,240); Macleods Pharm. (5,343)
Ukraine	-	-	8,640	-	4,320	-	Macleods Pharm.
Tajikistan	-	11,033	-	-	-	-	Macleods Pharm.
Georgia	-	8,997	-	-	-	-	Macleods Pharm.
Uganda	-	6,741	-	-	-	-	Macleods Pharm.
Myanmar	-	5,670	-	-	-	-	Cipla Ltd. (4,320); Macleods Pharm. (1,350)
Azerbaijan	4,455	1,124	-	-	-	-	Cipla Ltd. (4,455); Macleods Pharm. (1,124)
Belarus	2,429	2,808	-	-	-	-	Cipla Ltd. (2,429); Macleods Pharm. (2,808)
Kyrgyzstan	1,557	3,605	-	-	-	-	Cipla Ltd. (1,557); Macleods Pharm. (3,605)
Thailand	389	-	-	3,890	-	-	Cipla Ltd.
Pakistan	-	2,520	-	-	1,260	-	Macleods Pharm.
Nigeria	1,652	1,920	-	-	-	-	Cipla Ltd. (1,652); Macleods Pharm. (1,920)
Haiti	-	2,660	-	-	-	-	Macleods Pharm.
Armenia	-	1,712	-	-	-	-	Macleods Pharm.
Ethiopia	-	1,652	-	-	-	-	Macleods Pharm.
Iraq	-	1,368	-	-	-	-	Macleods Pharm.
Sudan	-	1,311	-	-	-	-	Macleods Pharm.
Cambodia	432	856	-	-	-	-	Cipla Ltd. (432); Macleods Pharm. (856)
Indonesia	-	1,160	-	-	-	-	Macleods Pharm.
Bulgaria	-	1,129	-	-	-	-	Macleods Pharm.

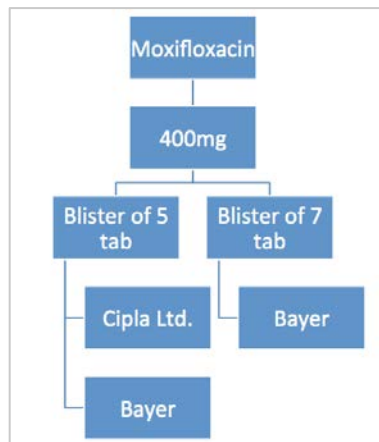
Guatemala	909	-	-	-	216	-	Cipla Ltd. (909); Macleods Pharm. (216)
Bangladesh	-	1,080	-	-	-	-	Macleods Pharm.
Lesotho	-	32	-	-	1,022	-	Macleods Pharm.
Rwanda	-	1,000	-	-	-	-	Macleods Pharm.
Eritrea	-	840	-	-	-	-	Macleods Pharm.
Senegal	503	330	-	-	-	-	Cipla Ltd. (503); Macleods Pharm. (330)
Zambia	810	-	-	-	-	-	Cipla Ltd.
Dominican Republic	-	-	-	-	695	-	Macleods Pharm.
Madagascar	63	529	-	-	-	-	Cipla Ltd. (63); Macleods Pharm. (529)
DPR Korea	-	450	-	-	-	-	Macleods Pharm.
Syrian Arab Republic	403	37	-	-	-	-	Cipla Ltd. (403); Macleods Pharm. (37)
Bhutan	-	432	-	-	-	-	Macleods Pharm.
Bolivia	-	-	-	-	300	-	Macleods Pharm.
Tanzania	-	175	-	-	90	-	Macleods Pharm.
Multicountry Western Pacific	-	260	-	-	-	-	Macleods Pharm. (130); Micro Labs Ltd. (130)
Tunisia	-	138	-	-	80	-	Macleods Pharm.
Bosnia & Herzegovina	169	-	-	-	-	-	Cipla Ltd.
Nicaragua	-	-	-	-	-	144	Cipla Ltd.
Serbia	-	140	-	-	-	-	Macleods Pharm.
El Salvador	-	-	-	-	104	-	Macleods Pharm.
Kosovo	96	-	-	-	-	-	Cipla Ltd.
Paraguay	-	87	-	-	-	-	Macleods Pharm.
Lao	-	-	-	-	75	-	Macleods Pharm.

Table reflects Global Fund PQR data from 2011 & 2012

Moxifloxacin

In 2011 and 2012, 400mg tablets of moxifloxacin were purchased in two different secondary package types from two different manufacturers, Bayer and Cipla, under Global Fund grants. In 2011 and 2012, Cipla held the majority of the market both in terms of volumes and total dollar value.

Figure 29: Moxifloxacin GF-PQR Supply Mapping



The value of the Global Fund financed purchases for moxifloxacin in 2011 was \$905,116 and \$355,774 in 2012. In 2011, 94,979 units of 5 tablet blisters and 2,050 units of 7 tablet blisters were purchased under Global Fund grants. In 2012, 40,644 units of 5 tablet blisters and 2,050 units of 7 tablet blisters were purchased.

Figure 30: Moxifloxacin Market Share Analysis, 2012

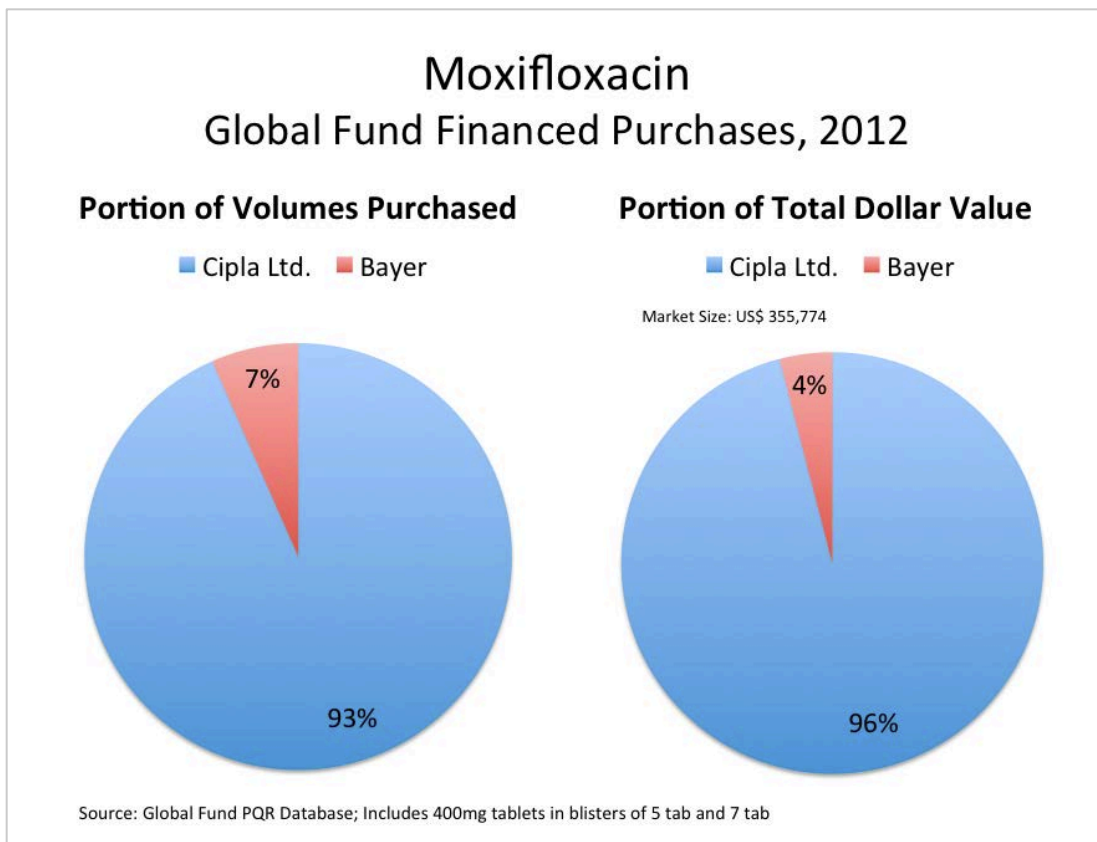
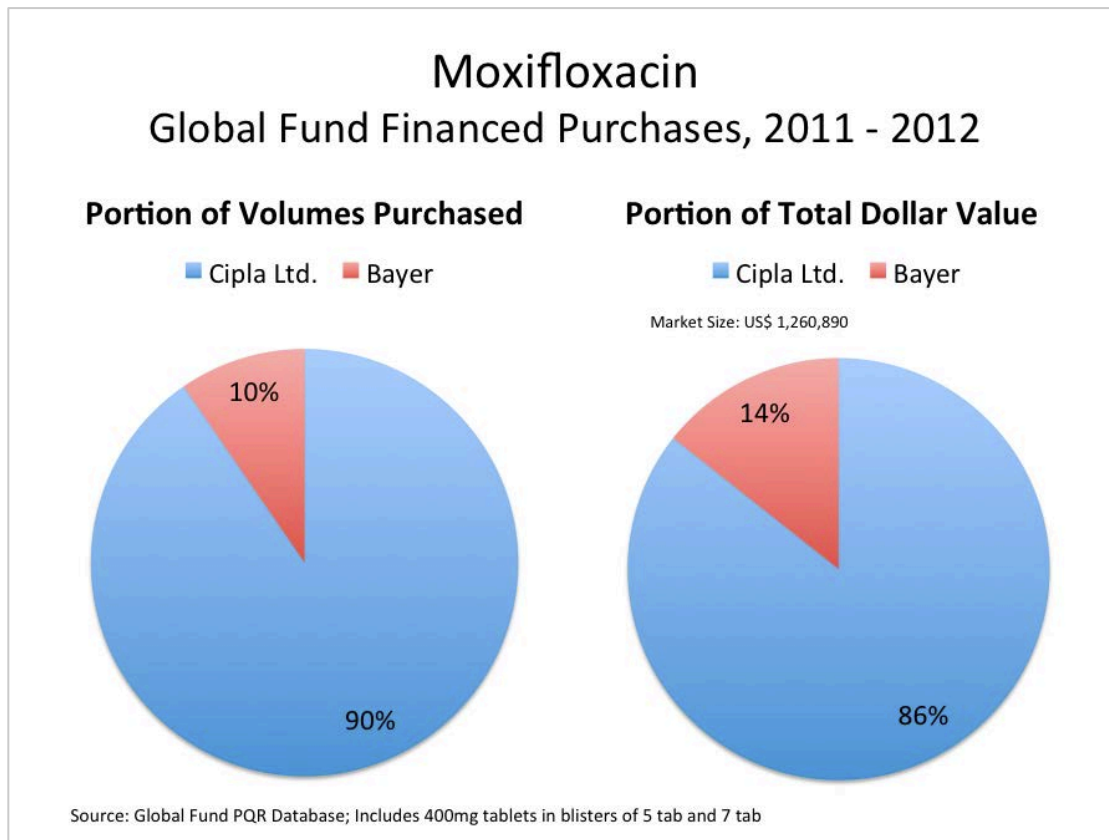


Figure 31: Moxifloxacin Market Share Analysis, 2011-2012



All countries purchasing moxifloxacin except for Haiti purchased the product in 400 mg, 5 tablet blisters. Azerbaijan and Kazakhstan purchased the largest orders of moxifloxacin in 5 tablet blisters (> 30,000 units) under Global Fund grants between 2011 and 2012. Haiti purchased 2,050 units of 7 tablet blisters during this time.

Table 13: Moxifloxacin Global Fund Purchases by Country

Moxifloxacin, 400mg			
Country	Units Purchased		Manufacturer
	Blister of 5 tab	Blister of 7 tab	
Azerbaijan	40,578	-	Cipla Ltd.
Kazakhstan	35,022	-	Cipla Ltd.
Moldova	13,307	-	Cipla Ltd.
Tajikistan	11,096	-	Cipla Ltd.
Belarus	10,687	-	Bayer (5,996); Cipla Ltd. (4,691)
Armenia	9,912	-	Cipla Ltd.
Haiti	-	4,100	Bayer
Uganda	3,744	-	Cipla Ltd.
Georgia	3,060	-	Cipla Ltd.
Lesotho	1,835	-	Cipla Ltd.
Nepal	1,460	-	Cipla Ltd.
Cambodia	1,160	-	Bayer (220); Cipla Ltd. (940)
Multicountry Western Pacific	1,152	-	Bayer
Sudan	940	-	Cipla Ltd.
Syrian Arab Republic	658	-	Cipla Ltd.
Ethiopia	580	-	Cipla Ltd.
Cuba	432	-	Bayer

Table reflects Global Fund PQR data from 2011 & 2012

Oral Bacteriostatic Second-Line Agents

Cycloserine

In 2011 and 2012, a single formulation strength and secondary package type, boxes of 100 tablets (10 x 10 blisters) of 250mg cycloserine were reported in the GF-PQR. During this two-year period, cycloserine was purchased from a single supplier, Macleods Pharmaceuticals. In 2011, the value of the Global Fund financed purchases for this formulation was \$11,839,460 and in 2012 it was \$4,332,452. The total units (i.e., 100 tablets packaged in boxes of 10 x 10 tablets each) purchased in 2011 were 198,849 units and 73,196 units in 2012 to total 272,045 units over this two-year period.

China, Kazakhstan, and Philippines placed the largest orders of cycloserine (>30,000 units) between 2011 and 2012.

Table 14: Cycloserine Global Fund Purchases by Country

Cycloserine, 250mg, Box of 100 tab (10 x 10)		
Country	Units Purchased	Manufacturer
China	35,701	Macleods Pharmaceuticals Ltd.
Kazakhstan	33,115	Macleods Pharmaceuticals Ltd.
Philippines	30,763	Macleods Pharmaceuticals Ltd.
Moldova	16,583	Macleods Pharmaceuticals Ltd.
Georgia	11,575	Macleods Pharmaceuticals Ltd.
Azerbaijan	11,059	Macleods Pharmaceuticals Ltd.
Tajikistan	10,622	Macleods Pharmaceuticals Ltd.
Vietnam	9,481	Macleods Pharmaceuticals Ltd.
Kyrgyzstan	8,274	Macleods Pharmaceuticals Ltd.
Belarus	7,499	Macleods Pharmaceuticals Ltd.
Myanmar	5,670	Macleods Pharmaceuticals Ltd.
Uganda	5,616	Macleods Pharmaceuticals Ltd.
DR Congo	4,991	Macleods Pharmaceuticals Ltd.
Nigeria	4,762	Macleods Pharmaceuticals Ltd.
Ukraine	4,760	Macleods Pharmaceuticals Ltd.
Pakistan	3,780	Macleods Pharmaceuticals Ltd.
Lesotho	3,036	Macleods Pharmaceuticals Ltd.
Haiti	2,726	Macleods Pharmaceuticals Ltd.
Armenia	2,292	Macleods Pharmaceuticals Ltd.
Iraq	1,782	Macleods Pharmaceuticals Ltd.
Cambodia	1,720	Macleods Pharmaceuticals Ltd.
Rwanda	1,675	Macleods Pharmaceuticals Ltd.
Ethiopia	1,565	Macleods Pharmaceuticals Ltd.
Tanzania	1,220	Macleods Pharmaceuticals Ltd.
Thailand	1,167	Macleods Pharmaceuticals Ltd.
Guatemala	1,127	Macleods Pharmaceuticals Ltd.
Sudan	1,124	Macleods Pharmaceuticals Ltd.
Dominican Republic	1,040	Macleods Pharmaceuticals Ltd.
Bulgaria	1,014	Macleods Pharmaceuticals Ltd.
Indonesia	925	Macleods Pharmaceuticals Ltd.
Bangladesh	900	Macleods Pharmaceuticals Ltd.
Eritrea	840	Macleods Pharmaceuticals Ltd.
Zambia	810	Macleods Pharmaceuticals Ltd.
Mongolia	767	Macleods Pharmaceuticals Ltd.
Madagascar	592	Macleods Pharmaceuticals Ltd.
DPR Korea	450	Macleods Pharmaceuticals Ltd.
Senegal	436	Macleods Pharmaceuticals Ltd.
Bhutan	432	Macleods Pharmaceuticals Ltd.
Multi-country Western Pacific	432	Macleods Pharmaceuticals Ltd.
Bolivia	414	Macleods Pharmaceuticals Ltd.
Syrian Arab Rep.	340	Macleods Pharmaceuticals Ltd.
Nicaragua	288	Macleods Pharmaceuticals Ltd.

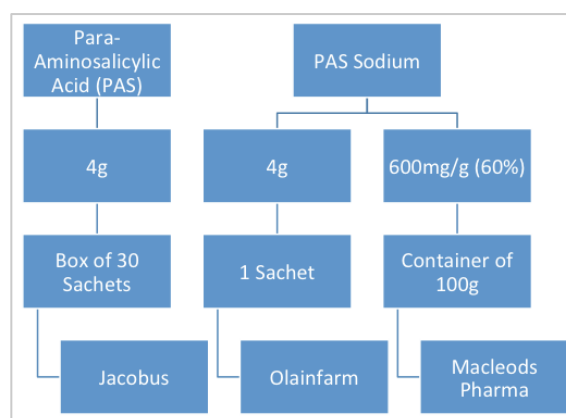
Nepal	216	Macleods Pharmaceuticals Ltd.
Lao	112	Macleods Pharmaceuticals Ltd.
Kosovo	96	Macleods Pharmaceuticals Ltd.
Paraguay	62	Macleods Pharmaceuticals Ltd.
El Salvador	33	Macleods Pharmaceuticals Ltd.

Table reflects Global Fund PQR data from 2011 & 2012

Para-Aminosalicylic Acid (PAS) and PAS Sodium

Global Fund financed orders of Para-Aminosalicylic Acid (PAS) were supplied by one manufacturer, Jacobus Pharmaceutical Company, in one formulation and secondary package type (4g sachets in boxes of 30) in 2011 and 2012. PAS Sodium was supplied by two manufacturers in 2011 and 2012, Olainfarm and Macleods Pharmaceuticals. Olainfarm produced 4g sachets of PAS Sodium and Macleods Pharmaceuticals produced 600mg/g (60%) PAS Sodium in containers of 100g.

Figure 24: PAS Products GF-PQR Supply Mapping

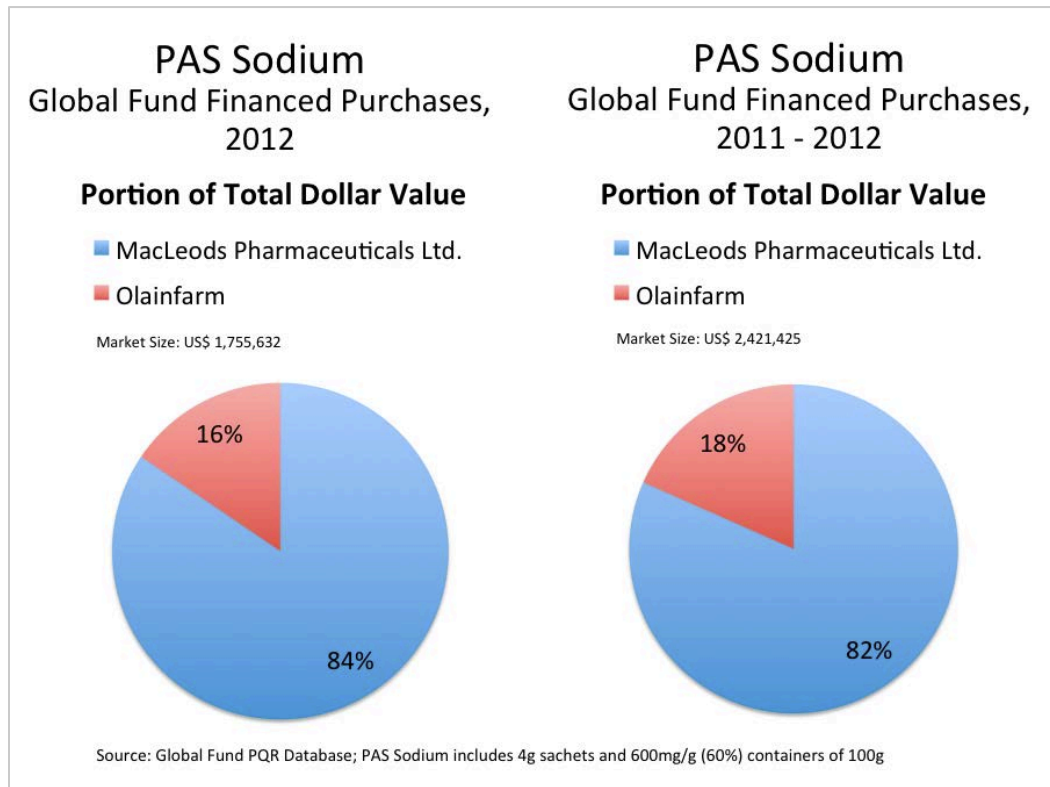


Two separate analyses were completed for the two PAS products (PAS and PAS Sodium) and their respective suppliers. In addition, a combined analysis of both PAS and PAS Sodium products was done to examine the market value for all PAS products.

Under Global Fund grants one supplier, Jacobus, produced 54,132 units of PAS in 2011 and 69,026 units of PAS in 2012. The value of the Global Fund financed purchases for PAS in 2011 as captured in the GF-PQR was \$5,771,050. It declined in 2012 to \$3,187,510.

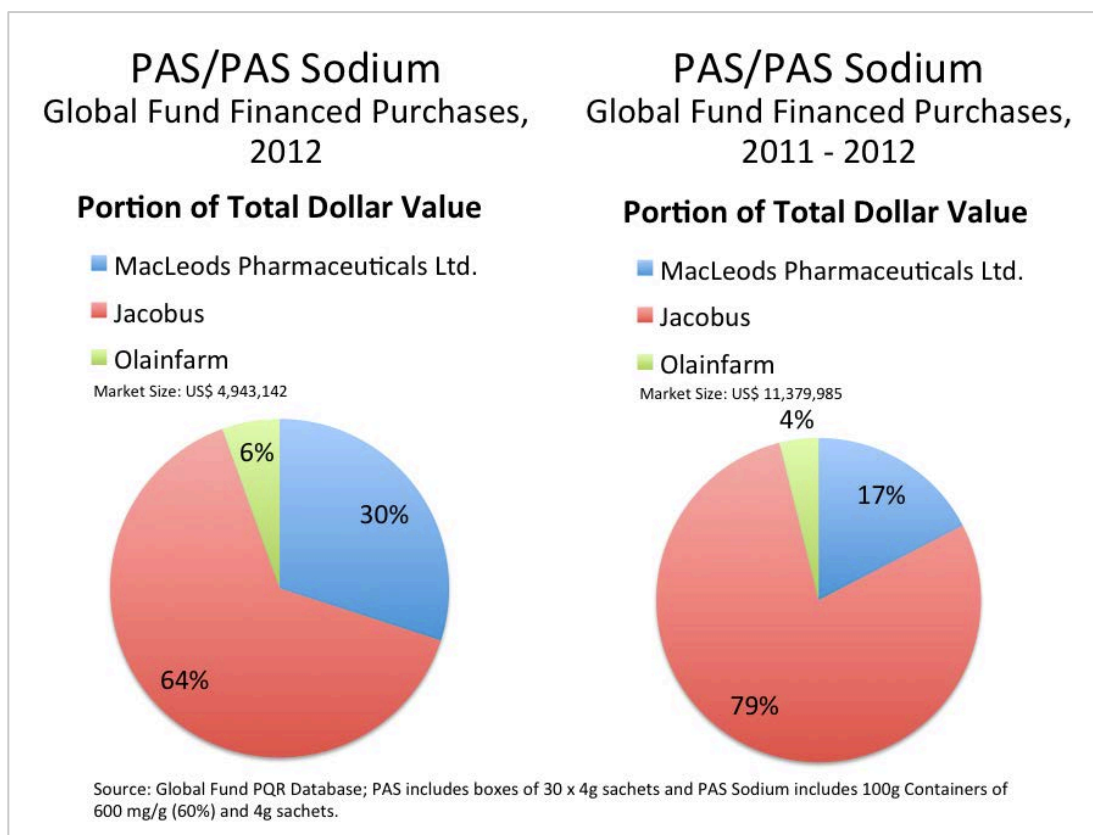
Two suppliers, Olainfarm and Macleods Pharmaceuticals, were reported in the GF-PQR as supplying the PAS Sodium for the Global Fund financed market in 2011 and 2012. The value of the Global Fund financed purchases for PAS Sodium in 2011 was \$665,793. In 2012 the value was \$1,755,632.

Figure 25: PAS Sodium Market Share Analysis, 2012; 2011-2012



With the two Global Fund financed PAS product markets (PAS and PAS Sodium) combined, Jacobus holds the largest share of the market in terms of total dollar value for their sales of 4g PAS sachets. The total value of the Global Fund financed purchases for PAS and PAS Sodium products was \$6,436,843 in 2011 and \$4,943,142 in 2012.

Figure 26: PAS Products Market Share Analysis, 2012; 2011-2012



Kazakhstan and the Ukraine made the two largest purchases of PAS/PAS Sodium products in 2011 and 2012 under Global Fund grants. Both countries purchased over 170,000 units of PAS/PAS Sodium products. Kazakhstan purchased from each of the three manufacturers that supply both PAS and PAS Sodium, with the largest units purchased for PAS Sodium from Olainfarm.

Table 15: PAS/PAS Sodium Global Fund Purchases by Country

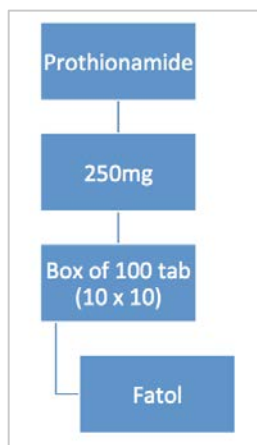
Para-Aminosalicylic Acid (PAS)/PAS Sodium				
Country	Units Purchased			Manufacturer
	PAS	PAS Sodium		
	4g	4g	600mg/g (60%)	
	Box of 30 Sachets	1 Sachet	Container of 100g	
Kazakhstan	884	115,000	71,598	Macleods Pharm. (71,598); Jacobus (884); Olainfarm (115,000)
Ukraine	-	174,000	-	Olainfarm
Uzbekistan	61,214	-	-	Jacobus
Philippines	39,622	-	-	Jacobus
China	23,966	-	-	Jacobus
Azerbaijan	-	-	22,500	Macleods Pharm.
Myanmar	-	-	13,860	Macleods Pharm.
Tajikistan	13,341	-	-	Jacobus
Kyrgyzstan	11,066	-	-	Jacobus
Moldova	5,141	-	-	Jacobus
Lesotho	5,022	-	-	Jacobus
Georgia	4,470	-	-	Jacobus
Belarus	4,278	-	-	Jacobus
Uganda	2,496	-	-	Jacobus
Bulgaria	2,469	-	-	Jacobus
Vietnam	2,132	-	-	Jacobus
Senegal	1,848	-	-	Jacobus
Thailand	1,548	-	-	Jacobus
Iraq	-	-	1,546	Macleods Pharm.
Eritrea	1,400	-	-	Jacobus
Romania	1,348	-	-	Jacobus
Bolivia	1,335	-	-	Jacobus
Morocco	-	-	1,208	Macleods Pharm.
Pakistan	-	-	1,196	Macleods Pharm.
Cambodia	-	-	1,066	Macleods Pharm.
Haiti	936	-	-	Jacobus
Sudan	625	-	-	Jacobus
Ethiopia	580	-	-	Jacobus
Serbia	500	-	-	Jacobus
Nepal	480	-	-	Jacobus

Bosnia & Herzegovina	376	-	-	Jacobus
Tunisia	329	-	-	Jacobus
Indonesia	268	-	-	Jacobus
Cuba	-	-	200	Macleods Pharm.
Multicountry Western Pacific	192	-	-	Jacobus
Rwanda	100	-	-	Jacobus
El Salvador	87	-	-	Jacobus
Kosovo	-	-	64	Macleods Pharm.
Syrian Arab Republic	55	-	-	Jacobus

Table reflects Global Fund PQR data from 2011 & 2012

Prothionamide

Figure 27: Prothionamide GF-PQR Supply Mapping



Prothionamide was purchased from a single supplier in 2011 and 2012 under Global Fund grants. Fatol manufactured 250mg tablets of prothionamide in boxes of 100 tablets (10 x 10). In 2011, 182,672 units of prothionamide were purchased from Fatol under Global Fund grants. In 2012 the number of units purchased declined to 41,617. The value of the Global Fund financed purchases for this formulation as captured in the GF-PQR was \$2,685,010 in 2011 and \$594,223 in 2012.

China, Uzbekistan and the Philippines purchased the three largest orders of prothionamide in 2011 and 2012 as reported in the GF-PQR. These orders were each larger than 30,000 units.

Table 16: Prothionamide Global Fund Purchases by Country

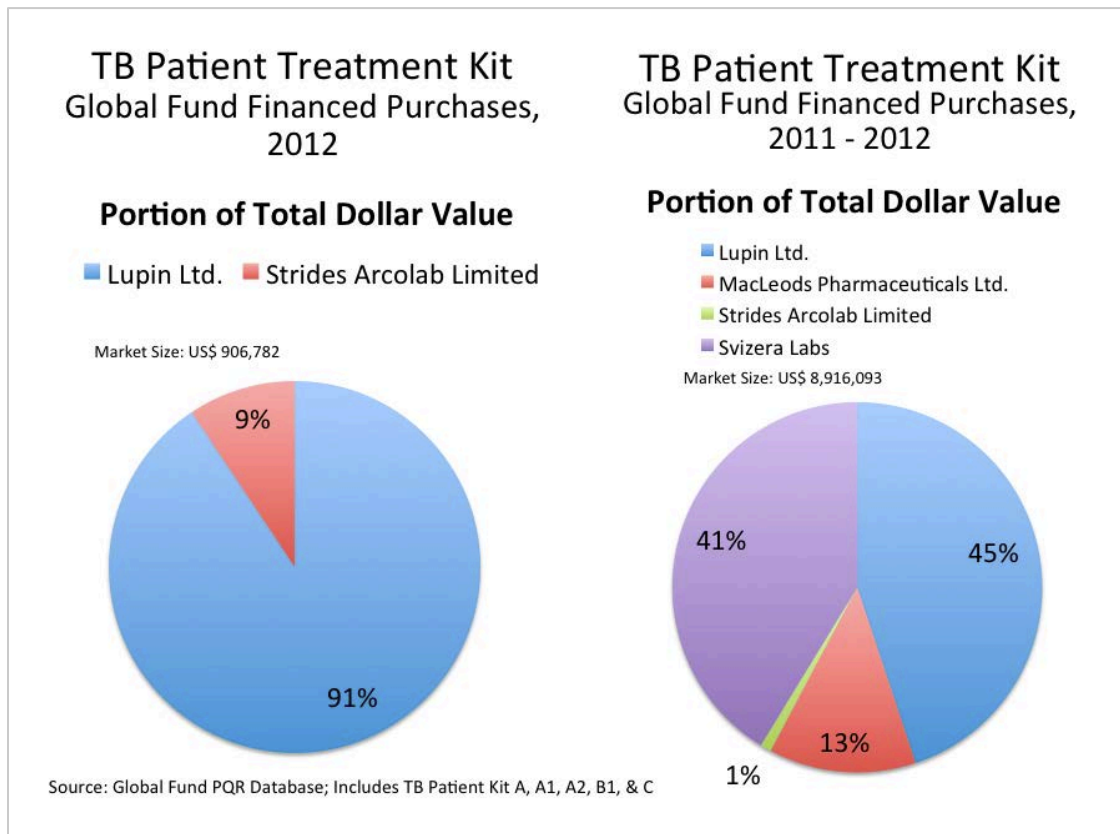
Prothionamide, 250mg, Box of 100 tab (10 x 10)		
Country	Units Purchased	Manufacturer
China	55,896	Fatol
Uzbekistan	35,458	Fatol
Philippines	33,345	Fatol
Kazakhstan	28,190	Fatol
Tajikistan	12,927	Fatol
Vietnam	11,676	Fatol
Azerbaijan	11,059	Fatol
Kyrgyzstan	8,274	Fatol
Georgia	7,730	Fatol
Nigeria	4,762	Fatol
DR Congo	2,570	Fatol
Russian Federation	2,400	Fatol
Armenia	2,284	Fatol
Lesotho	2,024	Fatol
Rwanda	1,400	Fatol
Thailand	1,167	Fatol
Bulgaria	1,129	Fatol
Eritrea	840	Fatol
Belarus	488	Fatol
Multicountry Western Pacific	432	Fatol
Bosnia & Herzegovina	151	Fatol
Cuba	87	Fatol

Table reflects Global Fund PQR data from 2011 & 2012

Tuberculosis Treatment Kits

As tuberculosis treatment kits represent a number of different product combinations in different formulations, a volume analysis was not possible. Market analysis shows that a smaller number of manufacturers supplied TB patient treatment kits in 2012 than in 2011 as reported in the GF-PQR database. The value of the Global Fund financed purchases for TB treatment kits declined considerably between 2011 (\$8,009,311) and 2012 (\$906,782). In 2011, five different treatment kit types were purchased. In 2012, only two treatment kit types were purchased, one of which was not purchased in 2011.

Figure 28: TB Patient Treatment Kit Market Share Analysis, 2012; 2011-2012



Single Supply Markets

The following tables highlight product markets where a single supplier fulfilled all purchases under Global Fund grants as reported in the GF-PQR database. Single supply markets are listed by year for 2011 and 2012 across all TB products. A third, combined table lists the products for which a single supplier was utilized for both years. Please note that information included in these tables reflects the GF-PQR data extracted in June 2013 with omissions of entries pending verification and/or lacking complete information.

Single Supplier Product Markets – 2011

Table 17: Single Supplier Product Markets, 2011

SINGLE SUPPLIER PRODUCT MARKETS - 2011						
DRUG	MANUFACTURER	FORMULATION	PACKAGE TYPE	# OF UNITS SOLD	AVERAGE COST PER UNIT	TOTAL GLOBAL FUND PROCUREMENT
Amikacin	Medochemie	500mg/2ml	Box of 10 vials	191,778	US\$12.34	US\$2,327,250
Amoxicillin + Clavulanate - FDC	Medochemie	875mg + 125mg	14 tab blisters	21,973	US\$5.21	US\$115,263
	Micro Labs Ltd.	500mg + 125mg	Bottle of 50 tabs	2,372	US\$6.94	US\$16,455
Cycloserine	Macleods Pharmaceuticals Ltd.	250mg	Box of 100 tab (10 x 10)	198,849	US\$59.81	US\$11,839,460
Ethambutol + Isoniazid – FDC	Cadila Pharmaceuticals Ltd	400mg + 150mg	Box of 672 tabs (24 x 28)	3,850	US\$20.25	US\$80,080
Isoniazid + Rifampicin- FDC	Lupin Ltd.	150mg + 150mg	Box of 672 tabs	5,433	US\$18.71	US\$101,229
Isoniazid + Rifampicin- FDC, dispersible tablet	Macleods Pharmaceuticals Ltd.	60mg + 60mg	Box of 84 tabs (3 x 28)	4,473	US\$2.26	US\$13,073
Prothionamide	Fatol	250mg	Box of 100 tab (10 x 10)	182,672	US\$14.90	US\$2,685,010
Terizidone	Fatol	250mg	Box of 50 tab (5 x 10 or 10 x 5)	173	US\$83.33	US\$14,416

Single Supplier Product Markets – 2012

Table 18: Single Supplier Product Markets, 2012

SINGLE SUPPLIER PRODUCT MARKETS - 2012						
DRUG	MANUFACTURER	FORMULATION	PACKAGE TYPE	# OF UNITS SOLD	AVERAGE COST PER UNIT	TOTAL GLOBAL FUND PROCUREMENT
Amikacin	Medochemie	500mg/2ml	Box of 10 vials	62,888	US\$10.75	US\$671,973
Amoxicillin + Clavulanate - FDC	Medochemie	875mg + 125mg	14 tab blisters	22,373	US\$4.77	US\$104,141
	GSK	500mg + 125mg	14 tab blisters	6,684	US\$4.17	US\$27,846
Cycloserine	Macleods Pharmaceuticals Ltd.	250mg	Box of 100 tab (10 x 10)	73,196	US\$59.49	US\$4,332,452
Ethambutol + Isoniazid – FDC	Cadila Pharmaceuticals Ltd	400mg + 150mg	Box of 672 tabs (24 x 28)	27,581	US\$20.25	US\$558,515
Ethionamide	Macleods Pharmaceuticals Ltd.	250 mg	Box of 100 tabs (10 x 10)	25,635	US\$7.31	US\$215,357
			Box of 50 tabs (5 x 10)	870	US\$15.00	
			Container of 100 tablets	2,013	US\$7.68	
Isoniazid + Rifampicin - FDC	Lupin Ltd.	150mg + 150mg	Box of 672 tabs (24 x 28)	7,571	US\$21.33	US\$185,860
			Strip of 144 tab (6 x 24)	5,060	US\$4.89	
Isoniazid + Rifampicin - FDC, dispersible tablet	Macleods Pharmaceuticals Ltd.	60mg + 60mg	Box of 84 tabs (3x28)	3,328	US\$3.00	US\$9,984
Ofloxacin	Cipla Ltd.	200mg	Box of 100 tabs	335	US\$5.00	US\$1,675
Prothionamide	Fatol	250mg	Box of 100 tab (10 x 10)	41,617	US\$14.35	US\$594,223
Streptomycin	Reig Jofré	1g vial	Box of 100 vials	24,056	US\$68.66	US\$1,657,501

Single Supplier Product Markets – 2011/2012

Table 19: Single Supplier Product Markets, 2011/2012

SINGLE SUPPLIER PRODUCT MARKETS – 2011/2012						
DRUG	MANUFACTURER	FORMULATION	PACKAGE TYPE	# OF UNITS SOLD	AVERAGE COST PER UNIT	TOTAL GLOBAL FUND PROCUREMENT
Amikacin	Medochemie	500mg/2ml	Box of 10 vials	254,666	US\$11.98	US\$2,999,223
Amoxicillin + Clavulanate - FDC	Medochemie	875mg + 125mg	14 tab blisters	22,373	US\$4.99	US\$219,404
Cycloserine	Macleods Pharmaceuticals Ltd.	250 mg	Box of 100 tab (10 x 10)	272,045	US\$59.73	US\$16,171,912
Ethambutol + Isoniazid – FDC	Cadila Pharmaceuticals Ltd.	400mg + 150mg	Box of 672 tabs (24 x 28)	31,431	US\$20.53	US\$638,595
Isoniazid + Rifampicin - FDC	Lupin Ltd.	150mg + 150mg	Box of 672 tabs (24 x 28)	13,004	US\$19.59	US\$287,088
			Strip of 144 tab (6 x 24)	5,060	US\$4.89	
Isoniazid + Rifampicin - FDC, dispersible tablet	Macleods Pharmaceuticals Ltd.	60mg + 60mg	Box of 84 tabs (3 x 28)	7,801	US\$2.63	US\$306,082
Prothionamide	Fatol	250mg	Box of 100 tab (10 x 10)	224,289	US\$14.77	US\$3,279,233
Terizidone	Fatol	250mg	Box of 50 tab (5 x 10 or 10 x 5)	173	US\$83.33	US\$14,416