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# POLICY BRIEF

## Planning the Purchase of Medicines and Medical Supplies for the Ministry of Health for 2012 and Its Implications for Improving Supply in the Dominican Republic



**The procurement of these products from the Global Drug Facility saved approximately USD 1 million per year.**

### Background

In 2005, using resources made available by the U.S. Agency for International Development (USAID), Management Sciences for Health (MSH), through its Rational Pharmaceutical Management Plus project, provided support for the introduction of fixed-dose combination medicines for treating tuberculosis (TB) in the Dominican Republic.<sup>1</sup> In 2008, the Strengthening Pharmaceutical Systems (SPS) program provided technical assistance for the introduction of treatment kits for the sputum bacilloscopy diagnosis of tuberculosis<sup>2</sup> (see picture). These interventions put an end to stock-outs of medicines and supplies and improved both the timeliness of diagnosis and adherence to treatment. In addition, the procurement of these products from the Global Drug Facility saved approximately USD 1 million per year.<sup>3</sup>

Based on these results, the Ministry of Public Health (Ministerio de Salud Pública; MSP) requested technical assistance for implementing similar interventions within the framework of the national program for the integrated care of HIV and AIDS. As a more sustainable alternative, MSH/SPS suggested that an integrated system be set up for managing the supply of medicines and medical commodities (SUGEMI) that would offer the potential for addressing, in an integrated manner, problems common to all MSP programs.

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<sup>1</sup> Study included in Barillas, E. 2005. *Sistema de suministro de medicamentos e insumos del programa nacional de control de tuberculosis de República Dominicana: Informe de viaje, abril de 2005*. Submitted to the U.S. Agency for International Development by the Rational Pharmaceutical Management Plus Program. Arlington, VA: Management Sciences for Health.

<sup>2</sup> Valdez, C., and E. Barillas. 2008. *Estudio de línea basal de la situación de la gestión de suministro de insumos de laboratorio del PNCT en República Dominicana*. Submitted to the U.S. Agency for International Development by the Strengthening Pharmaceutical Systems (SPS) Program. Arlington, VA: Management Sciences for Health.

<sup>3</sup> Valdez, C. and E. Barillas. 2009. *Evaluación del impacto de la introducción de combinaciones a dosis fija en el abandono del tratamiento de la tuberculosis en República Dominicana*. Submitted to the U.S. Agency for International Development by the Strengthening Pharmaceutical Systems (SPS) Program. Arlington, VA: Management Sciences for Health.

A baseline assessment conducted in 2008 did, in fact, reveal stock-outs of critical medicines and supplies, as well as losses from expired products attributable to planning deficiencies and a fragmented procurement system, among other causes.<sup>4</sup> Armed with this support, the MSP issued a ministerial resolution in July 2010 that makes the SUGEMI official and calls for its implementation in all areas of the country.

Since that date, the National Medicine Management Unit (Unidad Nacional de Gestión de Medicamentos) has been strengthened, and operating procedures have been prepared for all SUGEMI components. The first components to be implemented were (a) the strategic information system, which provides on a quarterly basis a limited group of indicators to guide the procurement and distribution of medicines and supplies, and (b) the process for planning purchases for 2012.

The planning exercise has provided various elements for improving the supply of medicines and medical commodities in the Dominican Republic. Drawing on the results of this exercise, this document presents options that could be considered by health authorities for improving the supply of medicines.

### **Exercise in Planning Purchases for 2012**

#### **Methodology**

In May 2011, two workshops were held to address the subject of programming the needs for medicines and supplies to be purchased in 2012. The individuals responsible for supply management in the nine health regions, plus pharmacists and administrators of 13 national hospitals participated in the workshops. Also participating in the exercise was the entity responsible for managing centralized purchasing (Essential Medicines Program/Supply and Logistics Center; PROMESE/CAL) and the National Health Service (SENASA).<sup>5</sup> The hospitals and regional health services (SRS) participating in the workshops consume approximately 80 percent of MSP medicines and supplies and 85 percent of the corresponding financial resources.

Using the historical consumption method, participants prepared estimates of needs and the budget necessary to meet those needs. The needs of health care units not participating in the workshops (approximately 150) were estimated by taking their consumption of medicines and supplies in 2010 and adding to that figure an additional 25 percent for safety stock.

<sup>4</sup> Barillas, E., and C. Valdez. 2008. *Análisis de la gestión del suministro de medicamentos e insumos de salud del sector público en República Dominicana*. Included in Barillas, E. 2008. *Informe de viaje a República Dominicana: Julio de 2008*. Submitted to the U.S. Agency for International Development by the Strengthening Pharmaceutical Systems (SPS) Program. Arlington, VA: Management Sciences for Health.

<sup>5</sup> Public agency responsible for managing health risks of subsidized, contributing, and contributing-subsidized public-sector members.

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### Results

The MSP does not have a national catalog of medical supplies, and the national medicines list is not always used as a basis for procurement. Consequently, programming included 576 medicines (including a range of dosage presentations for the same active ingredient) and 675 medical commodity items. This broad fragmentation of purchasing likely contributed to the stock-outs observed. At the time the planning exercise was carried out, 30 percent of medicines and 37 percent of medical commodities were out of stock in the regional warehouses and hospitals participating in the workshop. Tables 1 and 2 show the disaggregated data.

**Table 1. Shortages of Medicines in Institutions Participating in the Planning Workshop, May 2011**

Facility	Medicines			
	Total items programmed	No. items in stock	No. items out of stock	% items out of stock
Hospital Alejandro Cabral	119	78	41	34.45
Hospital Aybar	110	75	35	31.82
Hospital Dario Contreras	179	47	132	73.74
Hospital Jaime Mota	75	3	72	96.00
Hospital La Altagracia	83	69	14	16.87
Hospital Morillo King	72	70	2	2.78
Hospital Moscoso Puello	168	87	81	48.21
Hospital Musa	182	125	57	31.32
Hospital Regional Arturo Grullon	104	94	10	9.62
Hospital Robert Read	136	69	67	49.26
Hospital San Lorenzo de los Mina	147	107	40	27.21
SRS I	165	142	23	13.94
SRS II	128	113	15	11.72
SRS III	148	121	27	18.24
SRS 0	179	120	59	32.96
SRS V	151	112	39	25.83
SRS VI	179	147	32	17.88
SRS VII	168	131	37	22.02
SRS VIII	174	147	27	15.52
Totals	2,667	1,857	810	30.37

Source: SUGEMI quantification exercise for 2012 purchases.

**Table 2. Shortages of Medical Supplies in Institutions Participating in the Planning Workshop, May 2011**

Facility	Medical supplies			
	Total items programmed	No. items in stock	No. items out of stock	% items out of stock
Hospital Alejandro Cabral	111	99	12	10.81
Hospital Aybar	106	62	44	41.51
Hospital Dario Contreras	162	138	24	14.81
Hospital Jaime Mota	121	2	119	98.35
Hospital La Altagracia	93	68	25	26.88
Hospital Morillo King	31	31	0	0.00
Hospital Moscoso Puello	221	118	103	46.61
Hospital Musa	125	97	28	22.40
Hospital Regional Arturo Grullon	44	43	1	2.27
Hospital Robert Read	220	100	120	54.55
Hospital San Lorenzo de los Mina	133	91	42	31.58
SRS I	21	19	2	9.52
SRS II	33	28	5	15.15
SRS III	18	9	9	50.00
SRS 0	35	13	22	62.86
SRS V	13	6	7	53.85
SRS VI	22	22	0	0.00
SRS VII	22	9	13	59.09
SRS VIII	29	23	6	20.69
Totals	1,560	978	582	37.31

Source: SUGEMI quantification exercise for 2012 purchases.

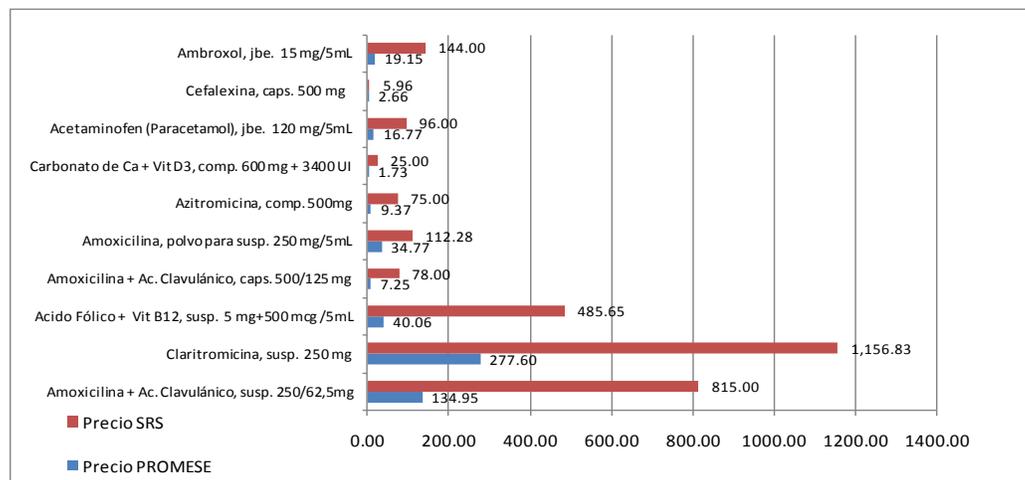
The chronic stock-outs of medicines and supplies, the trends observed in historical consumption, and the need to have safety stock on hand were the primary criteria used for estimating major requirements. Units of medicines and supplies increased by 80 percent from 2011 to 2012 (from 186 million to 335 million units). In monetary value (Dominican pesos; DOP), this would mean that if the products were procured at the same prices paid in 2010,<sup>6</sup> the financial resources required for 2012 purchases would be twice the amount required for purchases in 2010 (from DOP 1,724 billion in 2010, to DOP 3,503 billion in 2012).

Health care units in the Dominican Republic receive their products from two sources: centralized purchases made through PROMESE/CAL and decentralized purchases that each unit makes through a direct commercial

<sup>6</sup> The procurement prices paid by health facilities are the prices paid by PROMESE/CAL and those charged by private providers for decentralized purchases.

relationship with the provider.<sup>7</sup> The previously mentioned baseline study for the implementation of SUGEMI showed that decentralized purchase prices were, on average, 2,000 percent greater than PROMESE/CAL procurement prices. An analysis of one programming unit (Regional Health Service 0) showed that prices were approximately 1,200 percent greater than those paid by PROMESE/CAL (figure 1).

**Figure 1. Comparison of Procurement Prices Made through PROMESE/CAL and through Private Providers, SRS, May 2011**



Source: Prices paid to private suppliers in 2010 as reported by SRS 0.

On the basis of these figures, if the total amount of medicines programmed for 2012 were procured at PROMESE/CAL prices, the budget required would amount to DOP 1.601 billion, almost half of the amount estimated (DOP 3.503 billion) if the purchase were to be made at the same prices prevailing in 2010 (a combination of nonprioritized purchases made through PROMESE/CAL and decentralized purchases made at prices similar to those described).

Based on this evidence, all medicines and supplies not listed in the PROMESE/CAL schedule were eliminated from the purchase request submitted by the MSP to PROMESE/CAL, and an order of priority was established so that centralized purchases would concentrate on products procured in the greatest volume (greatest number of units) to take advantage of the economies of scale available through centralized purchasing.

Using these criteria, the MSP should transfer to PROMESE/CAL approximately DOP 1.141 billion for decentralized purchasing in 2012. This would make it possible to procure 74 percent of the units of required medicines and medical supplies (which total 669 product items, classified in the above-mentioned priority sequence). For decentralized purchases, the MSP should

<sup>7</sup> Barillas, E., and C. Valdez. 2008. *Análisis de la gestión del suministro de medicamentos e insumos de salud del sector público en República Dominicana*.

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have available DOP 459 million for the procurement of the 26 percent of units remaining (table 3).

**Table 3. Amounts Required for Centralized and Decentralized Purchases**

Items	Amount required per programming	Amount required through PROMESE (DOP)	Amount required through other providers <sup>a</sup> (DOP)
Medicines	1,088,906,492.15	354,068,287.66	317,175,562.94
Supplies	512,426,584.54	787,590,060.13	142,499,165.96
Totals	1,601,333,076.69	1,141,658,348.79	459,674,728.89

Source: SUGEMI quantification exercise for 2012 purchases.

a. Not listed in the PROMESE schedule, excluding vital and essential items.

### Implications for Improving Supply

This first national quantification exercise conducted using a standardized methodology provided for increased accuracy in making estimates and concentrating the greatest percentage of purchases on the agency offering the best prices (PROMESE/CAL). In addition, other options are available that would optimize the use of resources earmarked for the procurement of medicines and supplies. In a working meeting held on July 15, 2011, officials from USAID and consultants from MSH/SPS presented to technical staff and health officials, including the Minister of Health, three additional strategies that are worthy of consideration.

#### 1. Hold a Tender Process for Providers to Determine Prices for Decentralized Purchasing

This tender process would allow decentralized units to purchase any products that would not be procured by PROMESE/CAL only from qualified providers and at previously established reference prices. Conditions for the tender, which could be conducted by PROMESE/CAL, should take into account the following:

- The amounts programmed should not be significantly different from those required, because these estimates presuppose that providers will establish their sales prices and schedule their production accordingly.
- Prices should include the cost of transportation to hospitals and SRS. The experience of other countries suggests that this may increase sales prices by about 5–10 percent compared with purchases delivered to central warehouses.
- Programming of orders will be determined by the decentralized unit based on its consumption and its storage capacity.
- Payment will be made to the provider by the decentralized units, in compliance with previously established terms of payment.

**This tender process would allow decentralized units to purchase any products that would not be procured by PROMESE/CAL only from qualified providers and at previously established reference prices.**

The result of this exercise will be a list of medicines and supplies, together with their corresponding reference prices and the supplier(s) authorized to provide them (see example in table 4).

**Table 4. Example of an Item on the Schedule of Providers and Reference Prices for Decentralized Purchasing**

Medicine	Authorized price for decentralized purchase	Eligible/authorized providers (fictitious names)
Acetaminophen, tablets, 500 mg	0.26	Casa Médica Alfamos Mecicros

**A high percentage of the budget is used for products that, in principle, appear to be used in greater amounts than those recommended by therapeutic protocols.**

This list will be distributed to decentralized units as a point of reference for purchases. The supporting ministerial resolution should stipulate its mandatory use and establish penalties for procurements made at higher prices and from unauthorized providers.

## 2. Review the Use of Medicines and Supplies That Account for the Greatest Percentage of the Budget

In addition to the fragmentation of purchases stemming from the lack of a national catalog of supplies and the inadequate adherence to the national medicines list when purchasing, the quantification exercise revealed that a high percentage of the budget is used for products that, in principle, appear to be used in greater amounts than those recommended by therapeutic protocols or guidelines typically used in clinical practice. Interestingly, for example (see table 5),

- Amoxicillin + clavulanic acid is the antibiotic that accounts for the greatest monetary percentage of programmed purchases, followed by clarithromycin and ceftriaxone; and
- X-ray plates and tongue depressors show high consumption.

**Table 5. Prioritized List of Programmed Medicines and Medical Supplies**

Product description	Type of product	Units required 2012	Entire amount required 2012	Amount (%)	Cumulative (%)
Syringe (21G x 1 1/2) 5 mL – unit	S	11,287,729	155,610,336	4.44	4.44
Examination glove – medium 7½ (100 units)	S	3,575,444	122,965,474	3.51	7.95
Syringe (21G x 1½) 3 mL – unit	S	10,031,460	102,646,190	2.93	10.88
Test tubes with red stopper – box	S	182,505	98,762,385	2.82	13.70
Test tubes with purple stopper – box	S	135,015	70,416,525	2.01	15.71
Amoxicillin + clavulanic acid, susp. 250/62.5 mg	M	447,937	61,701,647	1.76	17.47
Wooden tongue depressor	S	711,965	61,484,144	1.75	19.23
Gauze 36 x 100 yds. intermediate weave padded – roll	S	116,511	58,167,516	1.66	20.89
Precut sterile gauze 4 x 4, envelopes of 10 – units	S	72,700	44,902,079	1.28	22.17
Human albumin 20 percent, vial 20 g/100 mL vial	M	27,851	42,841,902	1.22	23.39
Human albumin 20 percent 50 mL	M	20,488	40,354,450	1.15	24.54
10 x12 plates box of 100	S	28,125	40,131,812	1.15	25.69
Infant multivitamins/estim. (Vit. A, D, C, B, niacinamine) 1500 IU, 400, 35 mg, 0.5 mg, 0.6 mg, 8.0/mL	M	832,891	32,670,109	0.93	26.62
Surgical gloves M No. 7½ – pairs	S	1,757,249	31,393,290	0.90	27.52
Lactated Ringer's solution 1000 mL	M	1,056,269	29,290,600	0.84	28.35
Urine strips 10 SG Accu-Tell	S	4,801	28,752,190	0.82	29.17

Product description	Type of product	Units required 2012	Entire amount required 2012	Amount (%)	Cumulative (%)
11 x 14 plates boxes of 100	S	14,596	27,209,391	0.78	29.95
14 x 14 plates	S	10,512	26,037,470	0.74	30.69
Sodium chloride 0.9 percent solution, 1,000 mL	M	684,935	26,013,951	0.74	31.44
8 x 10 plates	S	25,189	25,307,841	0.72	32.16
Clarithromycin, susp. 250 mg	M	107,879	24,324,237	0.69	32.85
Ceftriaxone 1 g, vial	M	910,151	24,210,362	0.69	33.54
Braun bicarbonate hemodialysis kit	S	9,750	23,058,750	0.66	34.20
Sevoflurane 250 mL vial	M	5,250	22,881,924	0.65	34.85
IV catheter No. 22 G – unit	S	1,041,444	22,006,615	0.63	35.48
Amoxicillin powder for susp., 250 mg/5 mL	M	662,305	21,657,056	0.62	36.10
IV catheter No. 24 G - unit	S	969,264	21,357,890	0.61	36.71
Baxter bicarbonate hemodialysis kit	S	8,939	21,140,735	0.60	37.31
Isopropyl alcohol 70 percent solution – gallon (3.8 L)	S	72,057	20,133,391	0.57	37.89
Nifedipine 10 mg tab.	M	5,535,144	19,924,398	0.57	38.46

Source: SUGEMI quantification exercise for 2012 purchases.

Note: Only the first 30 programmed items are shown. S = Supply; M = Medicine.

These patterns of consumption point to the need for medicine and supply use studies, as well as audits to ensure compliance with established therapeutic protocols. These interventions may have the potential to improve efficiency of the budget use and even to improve the results of clinical interventions.

### 3. Request That PROMESE/CAL Manage the Purchase of Medicines Procured by the Social Welfare Program for a Reduced Group of Patients

For 2011, the MSP programmed DOP 1.068 billion to be spent on purchases for patients seen by the Social Welfare Program. As can be seen in table 6, a relatively small group of patients (e.g., cancer, chronic renal insufficiency, transplants) is using the greatest percentage of institutional resources earmarked for the procurement of medicines and medical supplies.

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**Table 6. Programming of the 2011 Budget for the Purchase of Medicines and Medical Supplies**

	Description	Amount (DOP)	Cumulative Amount (DOP)
MSP/Social Welfare purchases	Medicines and medical-surgical supplies for meeting institutional commitments to pharmacies, the Oncology Institute (chemotherapy), and other institutions	230,000,000.00	1,068,591,189.00
	Medicines for patients with catastrophic/chronic diseases, including renal deficiency	812,912,295.00	
	Medicines for low-income patients dispensed via Social Welfare	25,678,894.00	
MSP/Social Welfare hospital purchases	Medicines (PROMESE) for the primary-care level	120,000,000.00	811,943,344.40
	Medicines (PROMESE), specialized level (40 percent) from the reimbursable fund	691,943,344.40	
	<b>Total</b>	<b>1,880,534,533.40</b>	<b>1,880,534,533.40</b>

*Source:* Detailed breakdown of medication expenses in the 2011 budget. Vice-Ministry for Planning (Ministry of Public Health).

Because savings in this group of medicines could be significant, consideration should be given to having PROMESE/CAL, as an agency specializing in the procurement of such products, organize the corresponding tender processes, even if payment to providers continues to be made by the MSP's Social Welfare program. Another option would be for these medicines to be included in the providers and prices tender (strategy 1).

All of these options were submitted to and discussed with the Minister of Health in a working meeting held in July 2011. The Minister stated that he would pass them on to his technical team for a detailed study and prompt implementation, since doing so would not only improve the supply of medicines in the public sector but would also contribute to implementation of the current administration's policy of transparency. At the conclusion of the working meeting, USAID officials offered to provide technical assistance for the implementation process through MSH/SPS, if required.