

Incorporation of the Supply of Antiretrovirals into the Dominican Republic's Integrated Management System for Pharmaceuticals and Medical Supplies

The integration of the medicine and medical supply systems of the Dominican Republic's various disease control programs into a unified management system has led to improvements in estimating needs and in programming purchases, while enhancing distribution chain efficiency. Implementation of the Integrated Management System for Pharmaceuticals and Medical Supplies (SUGEMI) has been supported with resources of the President's Emergency Plan for AIDS Relief. SUGEMI offers a holistic solution to the supply problems facing the country that has efficiently and sustainably reduced the shortage of antiretrovirals in health facilities.

The Integrated Management System for Pharmaceuticals and Medical Supplies

In 2009, the Dominican Republic's Ministry of Public Health (MSP) requested technical assistance from the US Agency for International Development (USAID) to improve the supply of antiretroviral (ARV) medicines, following strategies similar to those used in the provision of support to the national tuberculosis control program.¹ USAID-funded studies,^{2,3} however, had documented problems in the supply of all medicines and health-related commodities used by the MSP. It was therefore suggested that the most efficient and sustainable alternative for improving the supply of ARVs would be the development and implementation of an integrated supply system. The system now known as the Integrated Management System for Pharmaceuticals and Medical Supplies (Sistema Único de Gestión de Medicamentos e Insumos; SUGEMI) is fully aligned with the country's health sector reform process and consistent with the decentralization of public

¹ In 2006, Strengthening Pharmaceutical Systems (SPS), a USAID-funded project implemented by Management Sciences for Health, began providing support for the introduction of fixed-dose combination antituberculosis medicines, sputum-smear bacilloscopy kits for diagnosing tuberculosis, and implementation of a system designed to improve the supply of these products (http://www1.msh.org/projects/sps/SPS-Documents/upload/sps_dr_flyer.pdf; <http://www1.msh.org/projects/sps/Global-Focus/Dominican-Republic.cfm>).

² Barillas, Edgar, and Claudia Valdez. 2009. *Informe Técnico: Análisis de la gestión del suministro de medicamentos en República Dominicana*. Submitted to the US Agency for International Development by the Strengthening Pharmaceutical Systems (SPS) Program. Arlington, VA: Management Sciences for Health.

³ Management Sciences for Health. 2010. *Estudio de línea basal sobre la situación de la gestión de suministros de ITS, VIH y SIDA en República Dominicana*. Submitted to the US Agency for International Development by the Strengthening Pharmaceutical Systems (SPS) Program. Arlington, VA: Management Sciences for Health.



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SIAPS
Systems for Improved Access
to Pharmaceuticals and Services

administration.^{4,5} The MSP embraced the idea of creating SUGEMI and backed it with a Ministerial Resolution issued in 2010 and the subsequent issuance of a Presidential Decree 168-13 in 2013.

Since that time, using PEPFAR resources delivered through two Management Sciences for Health (MSH) projects,⁶ USAID has supported the development of SUGEMI operating procedures, the training of staff in the implementation of those procedures, and the progressive incorporation of vertical disease control programs into an integrated system of supply management.

Integration of ARV Supplies into SUGEMI

SUGEMI is a direct result of the health sector reform process, translating that process to the operating plane. It sets up the separation of oversight functions (under the responsibility of Provincial Health Directorates [Direcciones Provinciales de salud Direcciones Provinciales de salud, or DPS]) from service provision functions (under the responsibility of the recently created Regional Health Services [Servicios Regionales de Salud, or SRS]). Integration of the vertical disease control programs into SUGEMI was based on the theoretical premise and the operating-level consensus that some of the functions of the supply cycle would be integrated into a single system, whereas others would continue to operate independently within the vertical programs (see table 1). In February 2012, a total of 434,933 units (tablets, vials, and ampoules) pertaining to the tuberculosis and HIV/AIDS programs were transferred from DPS provincial warehouses to warehouses operated by the SRSs. Requisition and dispatch of medicines and supplies are carried out at the SRS level, following standardized procedures established by the health sector reform process and by SUGEMI.

Table 1. Primary Responsibilities of Vertical Disease Programs and SUGEMI

Supply management components	Vertical disease program	SUGEMI
Medicine selection	X	
Programming (for annual purchase)	X	X
Procurement		X
Transportation		X
Storage		X
Requisition and dispatch	X	X
Quality assurance		X
Use (prescription, dispensing)	X	
Supply information system		X

⁴ Comisión Ejecutiva para la Reforma del Sector Salud. 1997. Nuevo Sistema de Suministros para el Sector Salud de República Dominicana; Propuesta SISUM.

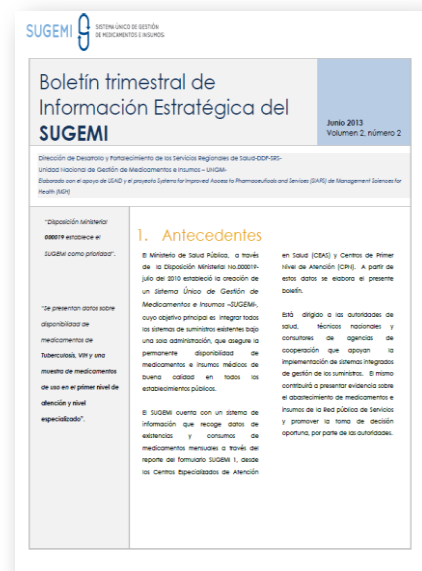
⁵ Secretaría de Estado de Salud Pública y Asistencia Social (SESPAS). 2005. Modelo de Red de los Servicios Regionales de Salud: Una guía para el desarrollo de los servicios de salud para la atención a las personas. Disposición 00024; SESPAS, Santo Domingo, República Dominicana.

⁶ These programs are Strengthening Pharmaceutical Services (SPS) and Systems for Improved Access to Pharmaceuticals and Services (SIAPS).

The incorporation of ARVs into SUGEMI involved changes in prescribing and dispensing procedures made necessary by the particular characteristics of the HIV/AIDS program. As dictated by SUGEMI, the Hospital Pharmacy Service (Servicio de Farmacia Hospitalario, or SFH) is responsible for the management of ARVs. The SFH is required to dispense to integrated care facilities (*servicios de atención integral*, or SAI) all medicines prescribed in accordance with national HIV program protocols. This provision necessitated the transfer to the SFH of all ARVs that were on hand in clinics at the time. To protect patient confidentiality, the procedure stipulates that the prescriber (an SAI physician) must deliver the prescriptions for all patients to the nurse, who must withdraw from the SFH—upon presentation of the prescription—the medicines the patient will need to take over the ensuing 30- or 90-day period.

Information for Managing the Supply of ARVs

Data fed into the SUGEMI information system are taken from requisition and dispatch forms, which are consolidated in the SRSs and, at the central level, by the National Pharmaceutical Management Unit (Unidad Nacional de Gestión de Medicamentos, or UNGM). These data, together with information forwarded by the central warehouses, provide the basis for a quarterly bulletin distributed by the UNGM to all decision makers. The bulletin shows stock on hand in terms of both units and months of availability for the most commonly used ARVs, as well for antituberculosis medicines and a group of tracer medicines used for the treatment of noncontagious diseases. The UNGM uses this information to redistribute available supplies of ARVs and to schedule deliveries from the central warehouse. In addition, the information thus provided makes it possible to analyze consumption trends with all actors involved in managing the supply of ARVs and to make appropriate decisions regarding adjustments needed with regard to purchase scheduling, order placement, updating and monitoring of health care protocols, and case reports by treatment regimen.



The information system's database and SUGEMI operating procedures enabled carrying out of exercises aimed at estimating needs and scheduling purchases for 2013 and 2014. As a result of the exercise conducted in 2012 (for purchases to be made in 2013), for the first time a shortfall of US\$3.8 million in national funds to finance the purchase of ARVs could be identified.

The chronic shortage of ARVs before the implementation of SUGEMI in 2010 (figure 1) can be attributed to this growing financial shortfall, which is the result of an increase in the number of patients and a decrease in funding provided by external sources.

The results of the programming exercise and of the subsequent financial analysis were presented, discussed, and validated by the UNGM, National HIV/AIDS Council, the National Program for Sexually Transmitted Diseases and AIDS (Dirección Nacional de Infecciones de Transmisión Sexual y SIDA), and agencies and cooperation organizations involved in managing the supply of ARVs. The consensus reached regarding the validity of the estimates calculated and the interventions to be implemented allowed the elimination of the above-mentioned financial shortfall through the implementation of a combination of strategies that included changes in providers to obtain more favorable prices and an allotment of US\$1.9 million in public resources to purchase medicines not covered by the Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund).

The programming exercise carried out in August 2013 (for purchases to be made in 2014) included both adult and pediatric ARVs, supplies for controlling mother-to-child transmission, and reagents for diagnosing HIV and carrying out immunological follow-up. Because the estimates included other health-related materials plus a nine-month safety stock, coupled with a reduction in the level of resources available from the primary donor (Global Fund), the required country funding is estimated at US\$6 million. This request was included in the MSP budget for 2014, and as of May–June 2014, the Dominican Republic is receiving all the ARVs and supplies purchased. For 2015 DOP 382 million was included in the proposed MSP budget.⁷

⁷ The MSP's proposed budget for 2015 will be presented to the Ministry of Finance in September 2014.

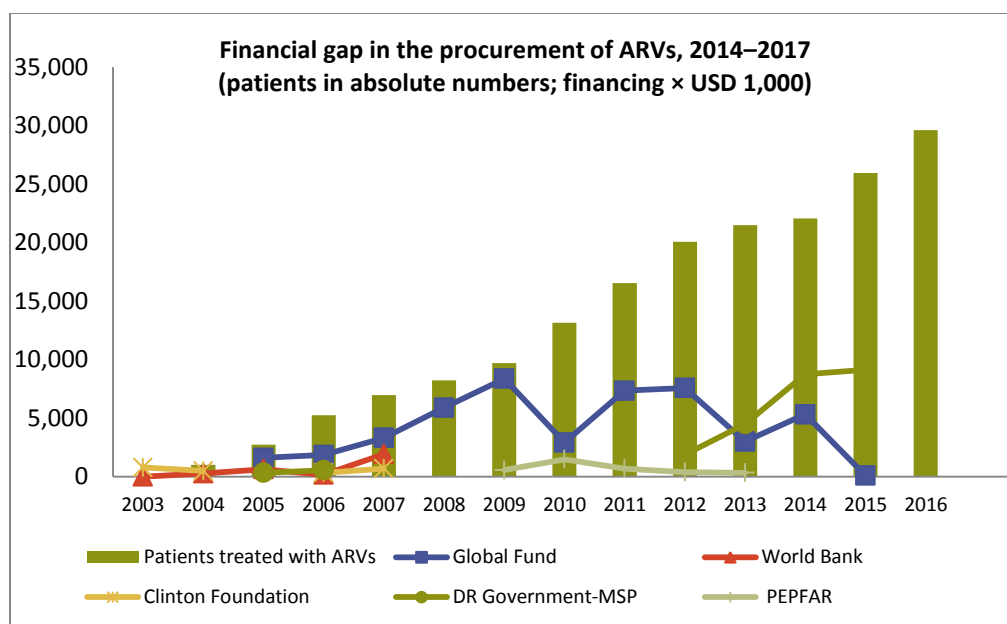


Figure 1. Financial shortfall for the purchase of ARVs in the Dominican Republic

Results

The implementation of SUGEMI has made possible collection of data on ARV consumption and stock on hand, which has in turn led to a closer alignment between the annual purchase and the established needs. In 2012, for example, 760,897 million units of adult ARVs were procured, compared with 952,701 units procured in 2013. In other words, although the number of patients increased by 6 percent (1,578 persons living with HIV/AIDS) from one year to the next, the number of units procured for consumption increased by 25 percent over the same period.

A recent study⁸ suggests that procurement based on an enhanced programming exercise and distribution carried out in accordance with standardized SUGEMI procedures have contributed to a substantial increase in ARV availability in health facilities (figure 2).

⁸ Unidad Nacional de Gestión de Medicamentos e Insumos de la Dirección de Desarrollo y Fortalecimiento de los Servicios Regionales de Salud. Agosto de 2013. *Estudio de línea de base de la situación del suministro de medicamentos e insumos en Centros Especializados de Atención en Salud de República Dominicana*. Santo Domingo, República Dominicana.

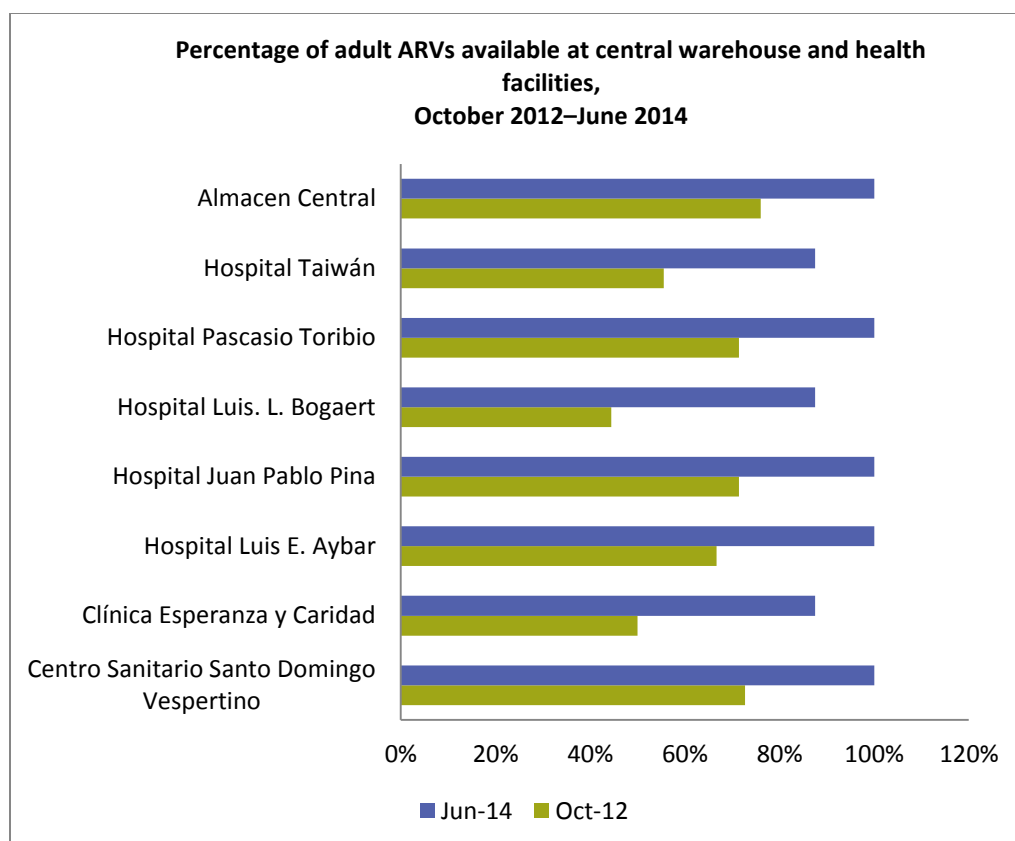


Figure 2. Percentage availability of ARVs for adults, October 2012 and June 2014

Consolidation and Sustainability of Results Achieved

The indicators of consumption and stock on hand generated by the SUGEMI information system provide guidance for annual purchases and periodic distribution of ARVs.

Within the SUGEMI information system, the indicators of consumption and of stock on hand that provide guidance for annual purchases and periodic requisitions and dispatches, have, since March 2013, been complemented by other monitoring indicators (for example, degree of consistency between requisitions and dispatches, percentage of units reporting on a timely basis), thereby ensuring the availability of complete information on supply management. This information is available on the MSP website⁹ for consultation by any user.

⁹ Dirección de Desarrollo y Fortalecimiento/SUGEMI, <http://www.msp.gob.do>.

Beginning in July 2013, a supervisory system that permits assessment of SUGEMI performance in SRSs and the facilities network has also been implemented within the SUGEMI framework. The system of supervision allows verification of data quality and identification of the causes of any shortages (see form). This system of supervision also makes it possible to resolve problems involving management of ARV supplies at the operating level and to identify those care-providing units exhibiting suboptimal performance so that appropriately focused technical assistance can be provided.

mip MINISTERIO DE SALUD PÚBLICA SUPERVISIÓN DE UNGM A

1 ¿Reportan Oportunamente SUGEMI 1?

SI ☐ NO ☐

2 ¿Completan Adecuadamente SUGEMI 1 y 2?

SI ☐ NO ☐

3 ¿Existe desabastecimiento de medicamentos?

NO ☐ SI ☐

1 Reporte oportuno y preciso + disponibilidad o no desabastecimiento atribuible a SRS = **Desempeño Óptimo**

Número de CPN y CEAScon reporte (a) _____
 Número total de CPN y CEAS (b) _____
 % de cumplimiento (a/b) _____

CAUSAS DE LA FALTA DE REPORTE OPORTUNO:

1. Personal no capacitado ☐ 1. _____
 2. No tiene formulario SUGEMI 1 ☐ 2. _____
 3. El coordinador de zona no entregó el SUGEMI 1 a la región ☐ 3. _____
 4. No tiene manual de procedimientos ☐
 5. Otro: ☐

PROBLEMAS IDENTIFICADOS EN PRECISIÓN DE REPORTE:

1. Personal no capacitado ☐ 1. _____
 2. No tiene tarjetas al día ☐ 2. _____
 3. No tiene a mano todos los datos ☐ 3. _____
 4. No tiene manual de procedimientos ☐
 5. Otro: ☐

% desabastecimiento medicamentos trazadores _____
 % desabastecimiento ARV adulto _____
 % desabastecimiento ARV pediátrico _____
 % desabastecimiento TB _____

CAUSA DE DESABASTECIMIENTO:

1. No realizó pedido ☐ 1. _____
 2. Pedido no fue bien elaborado ☐ 2. _____
 3. Desabastecimiento en almacenes centrales ☐ 3. _____