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Six years of saving lives

through stronger public health supply chains

A REPORT ON SCMS CONTRIBUTIONS TO PEPFAR RESULTS





Foreword

An estimated 2 million patients receive ARVs delivered by SCMS.

Three decades ago, the first case of AIDS was diagnosed in the U.S. By the turn of the century the world was experiencing a global AIDS crisis. On the African continent alone, some 30 million people were living with HIV, but only 50,000 had access to treatment. It was in this context that the United States established the President's Emergency Plan for AIDS Relief (PEPFAR), the largest international health initiative ever undertaken by one nation to address a single disease.

SCMS helps increase warehousing capacity to manage large volumes of public health commodities.



To date, PEPFAR has contributed to saving lives through a variety of voluntary prevention, counseling, testing, treatment and care programs. Today, more than 3.9 million people receive lifesaving treatment through the support of the American people.

In 2005, PEPFAR—through the U.S. Agency for International Development (USAID)—established the Supply Chain Management System (SCMS) to provide a reliable, cost-effective and secure supply of products for HIV/AIDS programs in 16 countries. This was no easy task: the countries hardest hit by AIDS, mostly in sub-Saharan Africa, lacked basic supply chain infrastructure and systems. Massive scale-up of treatment required a complete transformation of global, regional and national public health supply chains. At the time, many doubted HIV/AIDS commodities could be reliably delivered to the hardest-to-reach areas of the developing world. Public health supply chains were characterized by frequent stockouts, overstocks, expiry and wastage. Indeed, there was no precedent for what SCMS was tasked with achieving.

Six years after the creation of SCMS, what seemed impossible has been accomplished through innovative solutions and the application of industry best practices. SCMS now provides over 71 percent of all anti-retroviral medicines (ARVs) funded by PEPFAR.

The U.S. Government (USG) is more committed than ever to build on the successes of the last decade and continue our innovative work with local country governments and partners as we all strive toward our shared goal of a world without HIV/AIDS.



Ambassador Eric Goosby
U.S. Global AIDS Coordinator
Department of State



Dr. Rajiv Shah
Administrator
U.S. Agency for International
Development

SCMS Mission

To strengthen or establish secure, reliable, cost-effective and sustainable supply chains to meet the care and treatment needs of people living with or affected by HIV/AIDS.

In collaboration with in-country and international partners, SCMS:

1. Deploys innovative solutions to assist programs to enhance their supply chain capacity
2. Ensures accurate supply chain information is collected, shared and used
3. Provides quality, best-value health care products to those who need them





The International Supply Chain

SCMS supply chain monitors travel perilous distances to deliver health commodities.

International supply chains are complicated; they contain an infinite number of moving parts in multiple countries and across thousands of freight miles. A glitch in one portion of the system can mean the difference between products arriving on time and in full, or not arriving at all. Visibility into and understanding of all these moving parts is essential to ensure products are delivered safely and reliably.

Integrated health supply chains are driven by an understanding of patient needs, captured in forecasts and supply plans, which then guide procurement and supply to satisfy those needs. In countries without integrated supply chains, procurement is a transactional, one-off event. Each purchase is treated as a separate activity, sometimes with little or no connection to national health strategy or patient needs; the focus is simply on getting products to a specific location by a certain time, often resulting in:

- Commodity shortages and stockouts, causing dangerous “treatment holidays” for patients.
- High purchase prices and freight costs for expedited shipments on emergency orders due to lack of planning.
- Waste of commodities due to expiry, improper storage and theft resulting from lack of inventory control.
- Potential infiltration of substandard medicines due to ineffective, or absent, quality assurance.
- Redundancies and gaps in service due to poor coordination.



**SAVING MONEY,
SAVING LIVES**

PHOTO © JEAN JACQUES AUGUSTIN



71%*

of ARVs funded by PEPFAR
in the year ending September
2011 were delivered by SCMS



**\$59.1
MILLION**

saved in freight costs by
shifting deliveries from air
to sea and road for clients
who plan ahead



**\$1.1
BILLION**

in taxpayer money saved by
procuring generics rather than
branded ARVs due to FDA ge-
nerics approval policy (compared
to Accelerated Access Initiative prices)

**\$121
MILLION**

committed to emergency
orders, making sure patients on
treatment stay on treatment

Supply chains function best when they are integrated from end to end, based on connections among people working in various disciplines and locations to solve short-term problems and develop long-term strategies.

With funding from donors and technical support from USG-funded programs like SCMS, Ministries of Health and key agencies are changing the way they procure, store and distribute medicines and health supplies. HIV/AIDS treatment programs are creating vital connections in public health supply chains and reaping the benefits of the integrated procurement approach.

Integration benefits

- Lowers cost
- Ensures commodity availability and quality
- Serves all health programs
- Fosters sustainability

* All other data shown in this document is for life of project through September 2011, unless otherwise indicated.

Building Capacity and Strengthening Country Ownership

Warehouse management information systems are a key component of SCMS capacity building.

To support national strategies to meet ARV treatment goals, SCMS is helping build platforms to plan, procure, warehouse and distribute the unprecedented volume of commodities required. To increase local capacity and ensure supply chain sustainability, we share skills, tools and knowledge through customized, hands-on technical assistance.

Getting ahead of the curve: Introducing logistics and supply chain modules into pre-service training for health professionals

While the health system depends on accurate, timely supply of commodities, logistics training is usually absent from health professionals' educational curricula. Introducing logistics and supply chain modules in pre-service training enlarges the pool of in-country health professionals with an understanding of commodity logistics, elevating logistics to a critical component of health programs rather than an add-on task. SCMS is working with higher-learning institutions in countries including

Botswana, Guyana, Honduras, Namibia, Rwanda, Zambia and Zimbabwe to incorporate supply chain management modules into health worker training curricula.

Preparing health students for commodity logistics management

In Zambia, laboratory staff and managers were responsible for ensuring constant availability of commodities to support laboratory operations, but received no supply chain management training before they entered the workforce, leading to:

- Lack of understanding of the importance of logistics data
- Regular stockouts/overstocks
- Large USG in-service training investments



“SCMS is our leading partner. Because of SCMS we are where we are today.”

—Wondwossen Ayele, Deputy Director, PFSA (Central Medical Store), Ethiopia

Systems strengthening promotes sustainable, long-term solutions that build local capacity

- Forecasting and Quantification
- Procurement
- Freight and Logistics

- Warehousing
- Quality Assurance and Control

- Management Information Systems
- Distribution
- Coordination

In 2008, SCMS began working with the University of Zambia to incorporate a supply chain training course into the biomedical science curricula, developing modules and training lecturers. The lecturers then conducted all student trainings, while SCMS staff provided quality checks. To date, 272 students have taken the course.

- 80 percent of the students trained are currently employed in Ministry of Health (MOH) facilities.
- **SCMS in-service training costs were reduced by 62 percent**, as new professionals are entering the workforce already equipped with skills to manage laboratory commodity logistics systems.

Scaling up male circumcision and introducing waste management in Swaziland

In 2010, SCMS began working with the Government of the Kingdom of Swaziland (GOS) to implement their ambitious male circumcision program. SCMS procured and sourced all the equipment, surgical, medical and pharmaceutical kits, including incinerators for waste management, and established a warehousing and distribution system to deliver the kits to sites. SCMS worked with the CDC, the GOS and other partners to finalize national policies and training curricula for standardizing key steps in waste management, increasing the MOH's capacity to manage health care waste in general. Also, by working with the Swaziland Environmental Authority and the MOH's Environmental Health Department, SCMS developed a training program to certify local hauling firms to manage waste, thus increasing private sector capacity to support the program.

Expanding warehousing and distribution capacity: The backbone of a strong supply chain

Fully functioning local distribution systems—with appropriate planning, technology, storage and transport—are essential to providing regular, reliable supply of HIV/AIDS commodities.

In Ethiopia, transforming supply chain logistics and warehousing capacity

Before 2006, less than 30,000 people in Ethiopia were on ART, served by 73 treatment sites. Comprehensive HIV/AIDS prevention, diagnosis, care and treatment were generally absent, and there was no reliable logistics system to supply HIV/AIDS commodities. Securing commodities at the rate of scale-up needed to achieve universal access targets demanded a reliable supply chain.

SCMS worked with the Federal Ministry of Health to redesign the existing ARV system from a “push” system, in which a central authority determines quantities shipped, to a “pull” system, in which facilities determine deliveries based on need.

Critical to this effort was strengthening warehousing capacity to manage the large quantity of commodities flowing through the system. SCMS implemented inventory management systems to minimize commodity understocking and overstocking and outfitted permanent MOH warehouses with racking pallets, forklifts, dispatch tables, cold rooms and generators to bring them up to commercial standards. SCMS rented additional warehouses to accommodate overflow and also brought them up to commercial standards. PEPFAR, through SCMS, donated delivery vans, trucks, a refrigerated van, bikes and motorcycles to ensure health commodities reached regional hubs, treatment sites and patients.



“Through SCMS, we developed voluntary medical male circumcision (VMMC) kits and pooled procurement, which has resulted in a market price reduction from \$23USD to \$11USD per VMMC kit.... Lower prices will enable us to make the budget go further and reach our targets faster.” —Emmanuel Njeuhmeli, Senior Biomedical Prevention Advisor, USAID

In addition, SCMS ensured that human capacity building was included in the overall warehouse improvement effort. As part of our integrated approach, SCMS implemented a series of training programs including management and supervision skills for mid- and high- level managers, defensive driving for truck drivers, and forklift and generator operation. These staff now manage commodities for HIV/ AIDS, malaria, tuberculosis and all other health programs.

In five years, the number of treatment sites expanded to over 1,000 serving approximately 250,000 HIV/AIDS patients, an eight-fold increase in coverage. **Central Medical Store staff are now proud to report that nearly 100 percent of their deliveries are on schedule and ARV stockouts have been practically eliminated at the central level.**

Distribution of health commodities in Rwanda gets a boost from improved warehouse management

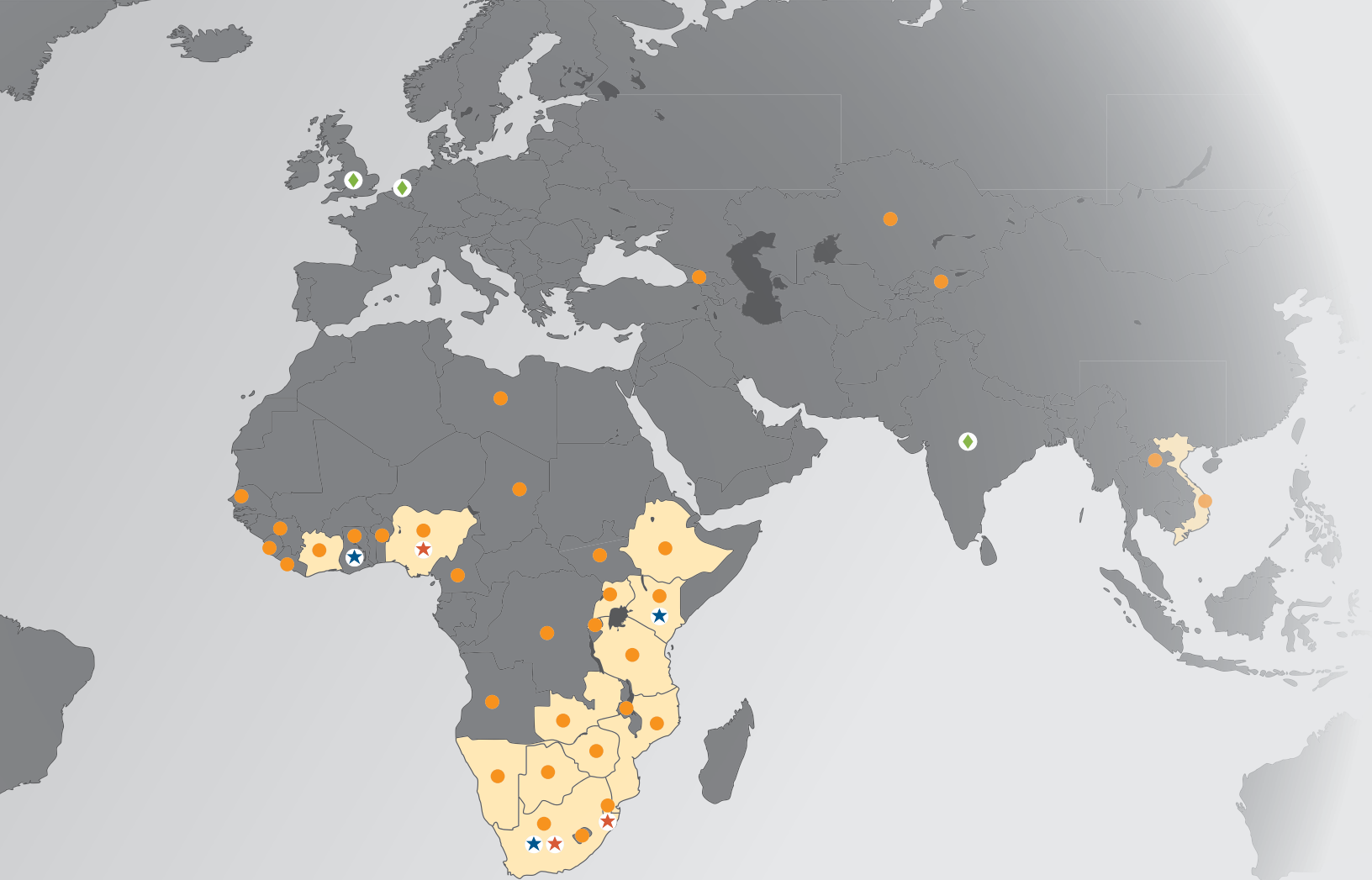
Rwanda is now providing ART to 80 percent of eligible patients, increasing from 400 in 2003 to over 93,000 in 2011. To support this scale-up, the Government of Rwanda introduced a National Coordinated Procurement and Distribution System (CPDS), in which the Medical Procurement and Distribution Division (MPDD), which operates the Central Medical Store, is solely responsible for procurement, storage and distribution of all health commodities, including ARVs. MPDD's primary objective was to create a modernized, professional and competitive operation by implementing best practices from the commercial sector.

To modernize its operations, MPDD restructured its warehouse management operations and moved from a passive to an active distribution system. To support these efforts, SCMS provided technical assistance in warehouse best practices, drafted standard operating procedures, installed automated warehouse management and stock management systems, and put in racking which increased storage capacity by 64 percent. Stocks are now managed



by a modern warehouse management system. SCMS also trained staff in warehouse management, quantification, forecasting, supply planning and data reporting. As a result, MPDD is now receiving drugs into the warehouse in just five days, down from 15. Dispensing time from MPDD was also reduced by half, decreasing overtime costs.

“This program is very critical for Rwanda. It improves access to medical supplies, brings down the cost of medicines for people, and now the supplies will be delivered on a timely basis.”
—Eric Nyiligira, Former Warehouse Director for MPDD



Connecting the Local to the Global

To meet government health targets, life-saving commodities must reach patients and medical personnel who need them. While SCMS delivers commodities to the central-level, our systems strengthening work extends much farther down the supply chain. This linkage between commodity procurement and technical assistance is essential to SCMS's work to promote country ownership; ensure safe, reliable supply; and quickly respond to emergency requests.

Botswana: SCMS is supporting the Government of Botswana to achieve its vision of no new AIDS infections by 2016 by transforming the Central Medical Store to deliver to world-class standards. By reforming essential medicines procurement, the Central Medical Store increased availability by 30 percent while prices decreased by 15 percent. The Central Medical Store is now used as the benchmark for procurement excellence in Botswana, serving as a model for other government agencies, such as police and transportation.

Côte d'Ivoire: SCMS staff continued operations during the 2011 political crisis, despite delayed donor and partner activity, bank closures and the destruction of our office. We worked closely with the U.S. Government (USG), the Global Fund and other partners to implement an Emergency Distribution Plan to ensure a continuous supply of ARVs to patients, holding essential products in our Ghana regional distribution center (RDC) for immediate response when the situation stabilized and ports reopened.



SCMS procures cold rooms and refrigeration equipment for multiple countries to help them manage cold chain products.

Ethiopia: To reach Ethiopia's universal access goals, SCMS worked with Pharmaceutical Fund and Supply Agency (PFSA) to significantly increase warehousing and distribution infrastructure by designing and outfitting 10 central and regional warehouses, training more than 3,000 health staff in supply chain management and developing a system to order and deliver commodities to over 1,000 sites (up from 170). Ethiopia is now treating about 250,000 patients.

Guyana: SCMS helped develop Guyana's first Standard Treatment Guidelines in Primary Health Care, critical to standardizing treatment at all public health facilities, and making procurement and rational prescription of essential drugs more efficient and effective. As part of the Joint Donor Initiative (with USAID, Global Fund and other stakeholders), we are establishing a state-of-the-art health commodity warehouse, equipped with an automated warehouse management system and quality assurance mini-lab.

Haiti: With U.S. Government support, SCMS is operating the most reliable and technically sophisticated health supply chain in the country, supporting a 20,000ft² pharmaceutical warehouse, staffed and equipped with the latest racking and materials handling equipment and software. SCMS manages a nationwide distribution system, delivering health commodities to all 170 USG- and Global Fund-supported health facilities.

Kenya: With just three staff, SCMS increased deliveries of rapid test kits by over half a million in one year and reduced distribution lead times from eight to three weeks. These kits are distributed to over 5,000 sites from the Kenya RDC. Since the project's inception more than \$30 million worth of lab reagents, supplies and equipment have been procured for Kenya.

Mozambique: SCMS has played a pivotal role in transforming warehouse management in Mozambique by supporting long-term planning to redesign the Central Medical Store

warehouse and consolidate management, stock and staff from 14 locations. SCMS outfitted the new warehouse with racking, equipment, cold rooms and a warehouse management system. The Central Medical Store now manages the large quantities of PEPFAR, Global Fund and national commodities.

Namibia: SCMS provides technical assistance and procurement to assist the MOH to ensure ARV availability for more than 150,000 patients. Also, we designed a community home-based care (CHBC) logistics system that was integrated into the national pharmaceutical supply chain, eliminating a parallel system and creating a sustainable CHBC replenishment mechanism. Since implementation, no stockouts of CHBC supplies have been reported.

Nigeria: SCMS pools procurement of ARVs and test kits for more than 20 PEPFAR implementing partners (IPs). As part of the initiative, we operate a local distribution center (LDC) in Abuja, where commodities are stored until picked up by each IP. Based on the results of pooled procurement for ARVs and test kits, USAID and IPs are piloting a program to add two high-volume laboratory reagents to the initiative. Noting its success, other donors—including the Clinton Health Access Initiative (CHAI) and UNITAID—have started using the LDC to store and distribute pharmaceuticals.

Rwanda: SCMS played a critical role in moving Rwanda from a passive distribution system (where clients collect their deliveries) to an active one (where the Central Medical Store delivers to clients). The active system was modeled on modern, customer-oriented supply chain best practices and hinges on pre-planned distribution. As a result, clients no longer wait in line for supplies at the central warehouse, emergency orders have decreased significantly and district pharmacies have better control of their inventories, avoiding expensive, time-consuming journeys to the medical stores.

Expanding our reach into Central America

Guatemala
Supporting efforts to bring national health commodity warehousing to a higher standard.

Honduras
Improving management and storage of all commodities at the central level and providing technical assistance to the National Department of HIV/AIDS to improve commodity availability at treatment centers throughout the country.

South Africa: PEPFAR pledged a one-time, two-year infusion of \$120 million to assist the South African Government scale up ART. SCMS, through USAID, was asked to provide procurement and distribution support valued at \$110M for this initiative. Using forecasts developed by CHAI and Management Sciences for Health (MSH), we pooled procurement to deliver ARVs at prices significantly lower than those obtained through the South African Department of Health's drug tendering process. As a result, the South African Tender Board adopted the same procurement practices, reducing South Africa's ARV prices by 53 percent, and saving the government \$630 million on a two-year tender.

Swaziland: SCMS provided supply chain services in support of Swaziland's ambitious male circumcision initiative. SCMS procured all equipment, surgical, medical and pharmaceutical kits and supplies necessary for the program. Additionally, through introduction of waste management systems for the male circumcision campaign, the Ministry of Health now has greatly increased capacity to manage all health care waste.

Tanzania: SCMS deployed community-based supply chain monitoring advisors to support Tanzania's ambitious treatment scale up goals. The advisors trained and coached more than 3,500 staff at the country's Medical Stores Department and health facilities. Armed with these skills, staff are preventing ARV stockouts and overstocks by identifying potential logistics breakdowns and taking corrective actions to ensure continuous treatment availability.

Uganda: SCMS has encouraged coordination of supply plans among PEPFAR IPs and managing the distribution of more than \$150 million in ARVs to over 60 sites. We also coordinated the transition of CHAI/UNITAID ARV funding to PEPFAR, preventing patient treatment disruption. Our work with Joint Medical Stores (JMS) and National Medical Stores also strengthened warehousing capacity and efficiency, reducing product expiries and improving picking time by 30 percent.

Panama

Through the Central American regional platform, providing training in national quantification of ARVs to assist the MOH in improving commodity management.

PHOTO © JIRO OSE

In many countries, SCMS trains staff at treatment sites to manage their health stocks.

Vietnam: SCMS helped design and implement the first methadone distribution program, providing access to over 5,500 intravenous drug users who are now reentering society with a reduced risk of contracting HIV. PEPFAR supports treatment of more than 70 percent of HIV/AIDS patients in Vietnam. Additionally, SCMS is working with the Government of Vietnam to establish a national supply chain for HIV/AIDS-related commodities, and helping integrate all health commodities into the system.

Zambia: We are providing technical assistance and training in laboratory logistics and commodity security to the MOH, creating a nationwide lab logistics system for Zambia. This system continues to reduce stockouts centrally. SCMS advocates for national long-term financing for HIV/AIDS commodities. We also promote coordination among partners and donors which reduces treatment interruption.

Zimbabwe: In 2007 the USG, through SCMS, provided funding to support 40,000 patients on treatment. Since then, this support has grown to 80,000 patients. SCMS, in collaboration with the USAID | DELIVER PROJECT, also assisted the Ministry of Health and Child Welfare (MOHCW) to design and implement an ordering and distribution system for ART. This new system built donor confidence in MOHCW's ability to manage large ARV stocks and helped increase national coverage to over 350,000 patients on ART.



**SAFE,
RELIABLE
SUPPLY**



10,374
Commodity Shipments to
50
Countries



80%
of orders through SCMS are
planned, helping prevent stockouts
and costly emergency orders



0.002%
Lost
to counterfeits or product theft
out of more than 10,000 deliveries
worth more than \$1 billion, due
to SCMS's rigorous security and
quality assurance measures



**Virtually No
Stockouts**
of ARVs and rapid test kits at
the central level for clients who
procure these commodities
regularly through SCMS

Overcoming Supply Chain Challenges

In the supply chain management business, you can do everything right, but all it takes is a strong wind blowing in the wrong direction to disrupt your best laid plans. Everything from global financial markets to inclement weather to earthquakes to manufacturing issues to political unrest can impede the safe and reliable delivery of commodities. Over the last six years, SCMS has encountered and surmounted a number of supply chain challenges. The resilience and agility of our integrated structure is central to effectively managing these emerging threats, giving us foresight into potential issues and the tools needed to overcome them.



Political Unrest



Natural Disaster/
Accident



Major Event

Addressing Security of Drug Supply to Protect Patients

SCMS overcame several product challenges to ensure patient access to a continuous supply of quality-assured drugs.

- Cotrimoxazole: Recall
- Didanosine: Demand outpaced supply
- Pediatric Nevirapine: High demand, limited manufacturer capacity
- Tenofovir: Demand outpaced supply
- Triomune: Demand outpaced supply
- Zidovudine: Longer lead times due to supply shortages
- USFDA product quality alerts



PHOTO: KENDRA HELMER

HAITI 2008–2011

Hurricanes Gustav, Hanna and Ike; Earthquake; Cholera

Our Haiti staff are no strangers to crises. They've weathered storms, earthquakes, epidemics and political upheaval, adjusting quickly to circumstances beyond their control. Within 48 hours of the earthquake the SCMS team was back at the warehouse, even though many of their homes and our offices were destroyed, identifying supplies for crisis response and shipping emergency kits to Port-au-Prince hospitals.

GUYANA 2009

Arsonists burn down the Ministry of Health (MOH)

SCMS worked with the MOH to ensure continuous supply and provided temporary storage.



CÔTE D'IVOIRE 2011

Political and socio-economic crisis

SCMS continued operations during the crisis, even though many donors and partners delayed activities, banks had closed, and our offices were destroyed. SCMS held stock in our Ghana RDC until ports reopened and the situation stabilized. SCMS also worked closely with the USG and partners in country to ensure commodities were delivered to sites through the Red Cross.



PHOTO: SIA KAMBOU / AFP

ICELAND 2011
*Volcanic Eruption and
Ash Cloud*

An ash cloud originating in Iceland covered most of Europe and disrupted air travel and shipping for a week. Because SCMS ships so much by ocean, the impact on our clients was minimal.

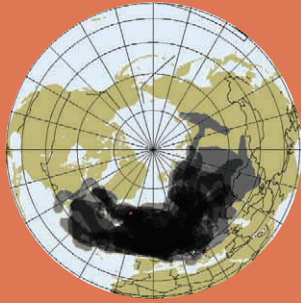


IMAGE: WIKIMEDIA COMMONS

JAPAN 2011
*Earthquake and
Tsunami*

All Determine rapid test kits are manufactured in Japan. SCMS was able to avoid major delivery delays.

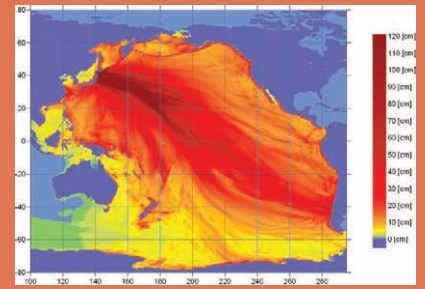


IMAGE: U.S. NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION

VIETNAM

SCMS also plans for Vietnam's yearly Tet holiday.

COAST OF SOMALIA
2005–PRESENT

Rise in acts of piracy affects security of shipping lanes. SCMS actively monitors threats to the security of our supply.

MOZAMBIQUE 2007

Weapons depot explodes, destroys the MOH warehouse
SCMS rented alternative warehousing during reconstruction.

ZIMBABWE 2006–PRESENT

Through years of crisis SCMS has ensured full supply of treatment for patients.

SOUTH AFRICA 2010
World Cup

South Africa serves as a major hub for shipping to Africa, not to mention the location of one of our busiest regional distribution centers. SCMS started working with clients and vendors a year before the event to plan their shipping schedules to avoid this busy and expensive time period, ensuring deliveries arrived on time and without disruption.



Investing in Innovation; Delivering Results

Lab equipment optimization keeps machines running and saves money in maintenance.

The sheer scope and scale of the HIV/AIDS crisis demands new approaches to quickly prevent transmission and reach as many patients as possible with lifesaving treatment. SCMS recognized that the old ways couldn't meet the need. To save lives we would need to innovate. This drove the creation of RDCs; spurred advancements in quality assurance, warehousing and distribution; and led to new methods to maximize budgets to save money.

Saving money, saving lives

SCMS continues to realize efficiencies through innovative approaches to reach more patients at lower cost.

Bringing down the cost of ARVs

We are one of several organizations, including the USFDA and CHAI, working together to lower ARV prices, bringing down the cost of 1st-line treatment from more than \$1,500 per year per patient in 2003 to between \$90 and \$200 today. **In other words, programs can now provide ARVs for up to 15 patients with what it once cost to provide ARVs to a single patient.**



of patients treated for ~\$1,500 per year

Pooling procurement and establishing indefinite quantity contracts

By consolidating multiple orders to buy in large volumes and establishing long-term, indefinite quantity contracts with manufacturers, SCMS obtains substantially lower prices. In keeping with our integrated approach, SCMS provides technical assistance to countries to strengthen client capacity in forecasting and supply planning; this is essential if we are to maximize the benefits of global pooled procurement and ensure regular, predictable supply of essential health commodities. All SCMS-supported countries now submit supply plans for ARVs and, in most cases, for other essential drugs, test kits and laboratory commodities.



PHOTO © JIRO OSE

Sharing data to ensure availability of supply

SCMS was the first project to provide critical HIV/AIDS forecasting and supply planning data to vendors, enabling them to be more responsive to PEPFAR-funded requests. Each quarter we provide suppliers with refreshed aggregated forecasts, helping them plan production and helping us improve supply availability.

Freight savings

While most comparable programs continue to ship by air, SCMS primarily uses sea and road freight for ARVs and other key products to reduce costs. On average, the project now ships about 76 percent of freight by ocean and land. For the life of the project, SCMS has saved our clients more than \$59.1 million in shipping costs. **Every dollar saved has the potential to be used to purchase more lifesaving commodities.** Forecasting and supply planning are essential elements in our ability to plan shipments. The earlier planning takes place, the greater our ability to use the most cost-efficient mode of shipment.

Purchasing generics

All told, SCMS has delivered more than \$562 million in ARVs to PEPFAR-supported countries while saving around \$1.087 billion through the purchase of generic ARVs compared to the cost of similar branded products.

A rationalized approach to lab equipment decisions saves more than \$500,000

When buying expensive laboratory machinery, programs must take total cost of ownership into account to procure the most appropriate technology that meets their needs. A rationalized approach leads to better decision-making, better performance and cost savings.

SCMS's access to market intelligence through our work with manufacturers and our insight into country needs enables informed procurement decisions. We assist clients in selecting the most appropriate lab commodities for their programs.

Recently, in responding to a request to buy 10 high-volume FACSCalibur machines for lab ART monitoring sites, SCMS's lab harmonization and procurement experts researched the number of patients served at each site, along with ART and pre-ART patient targets and testing trends, and then estimated the theoretical maximum number of CD4 tests per day for each facility. Based on this analysis, SCMS recommended FACSCalibur for three sites that performed more than 70 tests per day, and the more cost-effective FACSCount machine for the remaining sites. **The total cost of this procurement, originally estimated at more than \$1 million, was cut almost in half—a savings of over \$500,000.**

This effort is part of a new joint USAID/Centers for Disease Control and Prevention (CDC)/SCMS lab harmonization initiative to assist clients in making evidence-based decisions around laboratory procurement.

A modular solution to the capacity quandary: Warehouse-in-a-Box™

Even in the most secure environment, weather delays, cost overruns and lack of quality oversight can thwart expansion efforts. Modular building technology is a turnkey solution to overcoming these challenges. SCMS team member organization RTT created Warehouse-in-a-Box™ and Clinic-in-a-Box™ as modular solutions to fill gaps in country infrastructure. These can be rapidly deployed and readily expanded to meet individual country needs, ensuring projects come in on time and on budget, and that the facilities are of high quality.

So far, SCMS, on behalf of USAID, has commissioned these modular structures to expand warehousing capacity and treatment access in Ethiopia, Mozambique, Nigeria, Tanzania and Zambia.

Three state-of-the-art regional distribution centers ensure a rapid and reliable supply of frequently requested items



SCMS's RDCs were established as a sustainable solution with private-sector funding.

Regional distribution centers: Our most significant innovation to date

To protect fragile national supply chains from overload and to reduce lead times, SCMS team member organization RTT, a South African private-sector company, established regional distribution centers in Ghana, Kenya and South Africa to bring lifesaving medicines closer to those who need them. The RDCs were designed to be more responsive than anything we had seen in the public sector, delivering products in days, weeks or months—not quarters, or years.

RDCs effectively separate manufacturers' product supply from individual client demand. This accomplishes several things:

- Creates efficiencies and saves money
- Provides timely, accurate and safe transport, including cold chain
- Positions product closer to final destinations so SCMS can make smaller, regular deliveries and protect local systems
- Ensures rapid response to emergency requests
- Provides physical security to reduce the risk of theft, diversion or counterfeiting
- Maintains industry best-practice standards to protect product quality



The South Africa RDC is holding 80,000 MC kits to position them closer to countries scaling up VMMC programs and avoid overloading their supply chains. This also helps SCMS and our suppliers better meet demand and respond to emergency orders.



OPERATIONS

20 COUNTRIES

where SCMS has ongoing programs, providing technical assistance to transform supply chains, procurement services and stakeholder coordination

To ensure sustainability, RDCs were created as commercial enterprises independent of SCMS. While initially established to assist PEPFAR programs, RDCs are now used by a growing number of well-known global clients such as AstraZeneca, GlaxoSmithKline, Janssen Cilag, Merck Chemicals, Merck Serono, Pfizer, Brightstar for RIM (Blackberry) and HTC telcom products. **As independent, commercially viable entities, the RDCs will outlast the SCMS contract, bringing these benefits to everyone who uses them.**

Securing the supply chain: Ensuring high-quality medicines reach patients

SCMS's quality assurance program for pharmaceuticals is the most rigorous of any program providing medicines to the public sector in developing countries, preventing substandard ARVs, test kits and other medicines from reaching patients.

Testing the reliability of rapid test kits

Worldwide, buyers of test kits rely primarily on the manufacturer to ensure the quality of the test and the results it provides. All rapid test kits purchased by SCMS and other PEPFAR-supported programs are validated by the CDC before being approved for supply in PEPFAR programs; however, initially there was no routine surveillance to ensure ongoing product quality. In 2010, SCMS contracted the University of Maryland to develop and launch a groundbreaking program for testing diagnostic test kits, providing the first quality assurance program for test kits for hepatitis, HIV, pregnancy, syphilis and tuberculosis. Recently, this quality check identified defective HIV tests, preventing them from reaching patients. The defect was reported to the manufacturers to investigate the root cause. At the time of writing, this issue is still being investigated. No other international procurement service agent performs such tests.



The Ghana and Kenya RDCs were the first world-class pharmaceutical warehousing facilities of their kind in East and West Africa.



\$162 MILLION

in contracts placed with companies and organizations working in the countries we support

522

non-U.S. companies and organizations contracted to supply goods and services



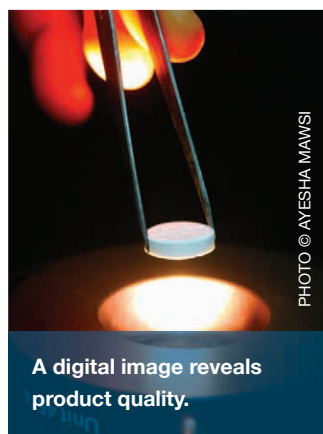
\$44 MILLION

in contracts placed with U.S. small businesses

These efforts reinforce SCMS's commitment to ensuring the products we procure meet international quality assurance standards, and to developing those standards where they do not exist.

Quality assurance in resource-limited settings: Innovative program launches in Tanzania

In many countries the local marketplace can be a dangerous place to purchase medicines. Substandard and counterfeit products are common. At best, they're ineffective. At worst, they can kill.



SCMS has been working with partners in Tanzania to assure the quality of drugs for OIs. SCMS worked with the Pharmaceutical R&D Laboratory at Muhimbili University to pilot an innovative program for performing quality testing on pharmaceuticals. Laboratory staff use two technologies—high-

performance thin-layer chromatography and near-infrared reflectance spectrometers—to assess product quality.

Tanzania was also the first SCMS-supported country to develop a prime vendor model for procuring OI drugs. Having the commodities under the responsibility of the vendor ensures reliable supply, economic growth and sustainability.

These initiatives are giving peace of mind to those responsible for public health in Tanzania. As Dr. Eliangiringa Kaale, Project Manager of the lab at Muhimbili said of suppliers, "Once they (vendors) know you check, they pay attention."



"This investment is reinforcing the local economy because you are using local services, things are coming to a local company that imports, pays duties, VAT, to the country, reinvesting in local infrastructure and paying 87 staff supporting 87 families, always transferring knowledge to the Ministry of Health." —Pedro Perino, Sales Manager, THL

SCMS contracts with many local companies. Here, private-sector staff service lab equipment.

Engaging with the Private Sector for Development Impact

PHOTO © BENOIT MARQUET

In Mozambique, a smart investment in the private sector

At times, investing in the private sector is the shortest route to sustainability for public health programs. In Mozambique, the MOH and SCMS engaged the services of THL, a local private company specializing in the procurement, distribution and maintenance of high-tech hospital equipment, to service 99 machines in 53 labs countrywide.

Health systems can't provide the best care without labs, and labs can't run without access to reliable equipment maintenance and consistent supply of consumables.

SCMS works closely with THL to raise the bar of its services and ensure its processes are in keeping with the U.S. government's exacting requirements. In turn THL's other clients benefit from overall improvements to their



“The investment was well worth the effort and expense, and helps attract new clients.”

—David Lutabana, Pharmacist in Charge, Pyramid Pharma, Tanzania

systems. The health system clearly benefits from these improvements, since the MOH is THL's biggest client.

We selected THL as a sustainable option; as a local commercial enterprise, they will stay long after projects and programs go away.

In Tanzania, encouraging best practices to increase local production capacity

Working with the government and other local institutions, SCMS is pre-qualifying a number of local manufacturers and wholesalers to supply safe and effective medicines for treating opportunistic infections.

Following an SCMS quality assurance visit, Pyramid Pharma, a local company competing for the business, implemented a number of suggested changes in their warehouse, including:

- Adopting standard operating procedures with staff training
- Establishing a quarantine room
- Implementing more rigorous security systems, including motion sensors
- Installing additional air conditioning units to maintain cool temperatures
- Implementing a pest control system
- Installing an awning at the entrance to prevent rain from flooding the warehouse

These changes are having the added benefit of attracting new clients to Pyramid. That's good news for Pyramid, and good news for Tanzania. As companies like Pyramid meet international standards and grow their businesses, the economy will grow, and patients will have increased access to safe, reliable medicines from private and public health facilities. SCMS is looking to replicate this experience in other countries.



“It (the collaboration with SCMS) has had an effect on our clients. Because of SCMS demands, we started to use an online portal to track maintenance of laboratory equipment so that SCMS and other stakeholders could easily access this information at the same time. Now we can expand the same model to the Ministry of Health and other clients...it's teaching how to deliver, how to maintain, how to supervise.” —Pedro Perino, Sales Manager, THL



Engaging in Global Efforts for Long-term Impact

The commodities SCMS procures keep health programs going.

The fight against HIV/AIDS is evolving rapidly. In just six years, we've seen an exponential expansion of resources to support prevention, care and treatment programs. Now we are seeing new scientific breakthroughs just as the effects of the global economic crisis are challenging donors to do more, with less.

This changing environment demands cooperation and collaboration at all levels. SCMS, with the support of PEPFAR and USAID, continues to engage in critical collaborative initiatives to develop sustainable solutions to meet health supply chain challenges.

Tracking the introduction of new products and scientific breakthroughs

SCMS actively tracks scientific advances in treatment and prevention and follows recommendations of WHO, UNAIDS and other international health agencies. This ensures SCMS can bring new treatment and prevention commodities into the pipeline promptly.

Supporting improved laboratory services in Africa

In early 2011, SCMS attended the launch of the African Society for Laboratory Medicine (ASLM) which aims to increase the quality of patient care through the advancement of medical laboratory practice. ASLM's mandate is to promote harmonization and advocate for the medical

laboratory profession on the continent. SCMS is sharing our laboratory commodity management experience in harmonization and rationalized instrument procurement.

Addressing the UNITAID program transition to ensure continuous treatment coverage

Since 2009, SCMS has been working closely with UNITAID, CHAI (procurement agent for UNITAID), UNICEF, the Global Fund, PEPFAR, and USAID to track and report on the transition of UNITAID's funding commitments to new donors in support of 2nd-line adult ARV treatment and pediatric ART as these programs draw to a close. This collaboration is ensuring continuous supply of essential commodities during the transition period.



PHOTO © JEAN JACQUES AUGUSTIN

Sharing procurement and supply chain information to benefit partners fighting HIV/AIDS

SCMS is a member of the WHO AIDS Medicines and Diagnostics Service (AMDS) network. As part of this group, SCMS submits pricing information for the WHO Global Price Reporting Mechanism and ARV registration status and content for the Procurement and Supply Management (PSM) toolbox. These activities help other HIV/AIDS programs access competitive prices for the medicines they buy.

SCMS also contributes forecast data to the WHO/UNAIDS working group on ARV forecasting for global demand to be shared with the major manufacturers of ARVs (innovator and generics) and active pharmaceutical ingredient producers to help them ensure that manufacturing supply meets program demand.

Improving donor coordination and supply planning to mitigate risks of treatment interruption

The Coordinated Procurement Planning (CPP) initiative was established in 2006 to assist countries, donors and implementing partners in improving procurement and supply, with the goal of ensuring continuous availability of ARVs. Membership is composed of the Global Fund to Fight AIDS, Tuberculosis and Malaria, PEPFAR, CHAI, UNAIDS, UNICEF, UNITAID, USAID, the World Bank, and WHO. SCMS serves as the CPP technical secretariat, facilitating the initiative's work to identify funding gaps and to advise on potential mitigation activities.



“Supply chain management is becoming more challenging in view of the UN high-level international commitment of achieving 15 million people on ART by 2015 and continued global financial constraints. There will be a great need to harmonize and align various partners with the Treatment 2.0 operational framework to ensure greater value for money in ARVs, laboratory equipment and other laboratory commodities. WHO values our collaboration with SCMS which has made a great contribution by collaborating with AMDS on efforts aimed at strengthening national procurement and supply management (PSM) systems to prevent stockouts and the exchange of strategic information with AMDS to ensure access to more affordable HIV medicines, diagnostics, and other health commodities.” —*Dr. Vincent Habiambere, Medical Officer, WHO*

Public-private partnership to address treatment needs of children with HIV/AIDS

Children with HIV/AIDS have needs and challenges different than those of adults. Under the leadership of PEPFAR, the U.S. government, pharmaceutical companies, UNAIDS, UNICEF, WHO, CHAI and Elizabeth Glaser Pediatric AIDS Foundation established the Pediatric AIDS Public-Private Partnership to address the unique treatment needs of children with HIV/AIDS. SCMS is testing methods to accelerate the registration of new pediatric products by drug regulatory authorities in developing countries under an initiative known as Pre-Approval Access to Therapies for HIV/AIDS (PaATH).

Collaborators:

African Society of Laboratory Medicine
Bill & Melinda Gates Foundation
Columbia University
Catholic Relief Services
Clinton Health Access Initiative (CHAI)
Department for International Development, UK (DFID)

Ecumenical Pharmaceutical Network (EPN)
Elizabeth Glaser Pediatric AIDS Foundation
The Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM)
Harvard School of Public Health
World Bank

World Health Organization (WHO)
UNITAID
United Nations (UNICEF, UNDP, UNAIDS)
US Government (CDC, DOD, PEPFAR, USAID)
University of Maryland
Zaragoza Logistics Center



What's Next

The global AIDS community set a challenging goal of treating 15 million people by 2015 at the 2011 UN high-level meeting on AIDS. The good news is that key ARV prices continue to trend downward for key ARVs and manufacturers are increasing production capacity. The most impacted nations continue to build infrastructure and capacity to manage commodities and provide services needed for HIV/AIDS treatment, but more remains to be done.

Providing ARVs for 15 million by 2015 will require a transformation in global supply.

As developing countries continue to scale up treatment while gradually taking on management of their own health systems they will need to contend with:

- A continuing economic crisis that is forcing some donors to cut funding
- Limits to availability of active pharmaceutical ingredients (APIs) to meet rising demand
- As patents end, new opportunities for generic manufacturers to make HIV/AIDS and other drugs for more profitable western markets than for developing markets
- Fragmentation in the pediatrics marketplace, reducing manufacturer incentives to supply
- Introduction of new drugs and disruptions caused by new regimens
- Integration of new biomedical prevention techniques into existing programs

Thanks to PEPFAR and USAID's innovative design, SCMS is able to respond to these challenges using an integrated approach to health supply chain systems strengthening, and our unique access to market intelligence to deliver country-led solutions. We will continue to support countries' national goals by:

- Working with donors, suppliers and others to find ways to overcome market challenges and promote investment in manufacturing APIs and medicines
- Promoting economic development by finding ways to procure medicines and laboratory supplies on the local market
- Supporting new prevention programs, including for male circumcision and, eventually, microbicides and vaccines
- Coordinating with global partners on procurement of pediatric ARVs

President Barack Obama and Secretary of State Hillary Rodham Clinton have challenged the world to use the experience of the last 30 years to turn the tide of the HIV/AIDS pandemic. Global and local supply chains will play a major role in meeting this challenge to provide universal access to defeat this deadly disease.

Afterword

Taking an HIV test is no longer the death sentence it once was. Today, over 3.9 million people are receiving lifesaving treatment through the support of the American people. Through the Global Health Initiative (GHI), USAID, PEPFAR, and CDC are continuing to fight the epidemic.

For the past six years, SCMS has been making a significant contribution to the global fight against HIV/AIDS. Treatment drugs for over 71 percent of patients supported by the USG are procured and delivered through SCMS. In keeping with the USG's focus on smart investments to save lives, SCMS—through pooled procurement employing innovative shipping approaches and purchasing generic AIDS drugs—has supplied over \$920 million of commodities and saved more than \$1.087 billion.

This work is far from over. HIV continues to cut millions of lives short. This year, 2.6 million individuals will become infected with HIV. Combating HIV/AIDS requires a steadfast focus on remaining gaps and challenges as we find more ways to strategically apply technology and innovation for sustainable development solutions. The key to long-term sustainability of health investments is the nexus between health objectives, technology developments and governance policies to build stronger health systems. Strong supply chains are a critical component of sustainable health service delivery.



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Supply Chain Management System (SCMS)



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The Partnership for Supply Chain Management is a winner of two prestigious awards for our work on SCMS to provide a safe, reliable supply of HIV/AIDS commodities to countries most in need.

COVER PHOTO: **SCMS delivers life-saving commodities to some of the hardest-to-reach areas of the world.**