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HIV/AIDS COMMODITY SECURITY

A FRAMEWORK FOR STRATEGIC PLANNING

May 2006

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DELIVER
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HIV/AIDS COMMODITY SECURITY

A FRAMEWORK FOR STRATEGIC PLANNING

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DELIVER
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Abstract
An effective response to HIV/AIDS demands multisectoral and multi-programmatic action. HIV/AIDS programs, including antiretroviral therapy, prevention of mother-to-child transmission, voluntary counseling and testing, and post-exposure prophylaxis, require a vast number and range of commodities. Ensuring that customers can obtain and use these commodities when and where they need them, otherwise known as commodity security, requires an effective supply chain. In addition, commodity security also requires a coordinated strategy to address programmatic elements and cross-cutting issues, such as leadership and effective policies. This paper presents the HIV/AIDS commodity security framework, which provides a model that brings together all of the programs, functions, and cross-cutting issues that must be addressed when developing a strategy to ensure continuous availability of HIV/AIDS commodities.

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Abbreviations and Acronyms

AIDS	acquired immune deficiency syndrome
ART	antiretroviral therapy
ARV	antiretroviral
HIV	human immunodeficiency virus
IEC	information, education, and communication
OI	opportunistic infection
PEP	post-exposure prophylaxis
PMTCT	prevention of mother-to-child transmission
QA	quality assurance
STI	sexually transmitted infection
TB	tuberculosis
UNFPA	United Nations Population Fund
UNICEF	United Nations International Children's Emergency Fund
VCT	voluntary counseling and testing

Acknowledgments

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Introduction

An effective response to HIV/AIDS demands both multisectoral and multiprogrammatic action, with a variety of programs that address prevention, treatment, and care, all with appropriate links between them. These programs—including antiretroviral therapy (ART), prevention of mother-to-child transmission (PMTCT), voluntary counseling and testing (VCT), post-exposure prophylaxis (PEP), blood safety, sentinel surveillance, and palliative care—require a vast number and range of commodities. Those commodities include antiretroviral (ARV) drugs; drugs to treat opportunistic infections (OIs); HIV test kits; laboratory reagents; medical consumables such as syringes and gloves; and information, education, and communication (IEC) materials.

One of the major constraints in the scale-up of successful national HIV/AIDS programs is the inability of the national program to make available the commodities needed. Ensuring that customers can obtain and use these commodities when and where they need them—also known as commodity security for HIV/AIDS programs—requires an effective supply chain. But an effective supply chain on its own will not provide HIV/AIDS commodity security. It also requires effective service delivery and other programmatic interventions, such as IEC, and the existence of a supportive policy, legal, and social environment.

Just as the supply chain is only as strong as each of its components—selection, forecasting, quantification, storage, distribution, inventory control, monitoring, and financing—the provision of HIV/AIDS services depends on each of its programmatic elements as well as on cross-cutting issues, such as leadership and effective policies. Overall commodity security for the people who use HIV/AIDS programs and services rests on the interplay among all of these elements. Without an effective coordinated strategy to address all of these issues, HIV/AIDS commodity security cannot exist. Equally, effective implementation of those policies must exist across all aspects of HIV/AIDS programming, including the supply chain, to ensure that HIV/AIDS commodities are available and accessible when and where they are needed. A commodity security approach, which looks beyond the immediate supply chain functions such as forecasting, procurement, and distribution, is needed to ensure commodity availability. As an illustration of the interplay among all these elements, the HIV/AIDS commodity security framework provides a model that brings together all of the programs, functions, and cross-cutting issues that must be addressed in developing any strategy to ensure continuous availability of HIV/AIDS commodities.

A Framework for HIV/AIDS Commodity Security

The availability and accessibility of quality HIV/AIDS commodities rest on the interplay of a series of functions, programs, and activities. The HIV/AIDS commodity security framework (figure 1) brings together these elements and provides a starting point for developing a strategy for HIV/AIDS commodity security.

The framework is presented as a series of concentric circles, with the desired outcome—that customers can obtain and use the needed commodities—as the center, or bull's-eye. That central point is what we call commodity security for HIV/AIDS programs: where customers—both service providers and, ultimately, patients—can obtain and use the HIV/AIDS commodities they need, whether they are drugs, reagents, test kits, contraceptives, or consumables, when and where they need them.

Obviously, the diversity of programs implies a wide range of commodities from drugs to laboratory reagents. The commodity package triangle (figure 2) highlights some of the types of commodities needed.

As noted, an effective national HIV/AIDS effort requires three different categories of programs: prevention, treatment, and care, which are shown in the innermost circle of the framework. Within each category, several types of programs will exist, and the environment must support commodity security for this diverse range of programs. Under prevention, programs could include PMTCT, VCT, OI treatment, blood safety, sentinel surveillance, and condom distribution. Treatment programs

Figure 1.
HIV/AIDS Commodity Security Framework

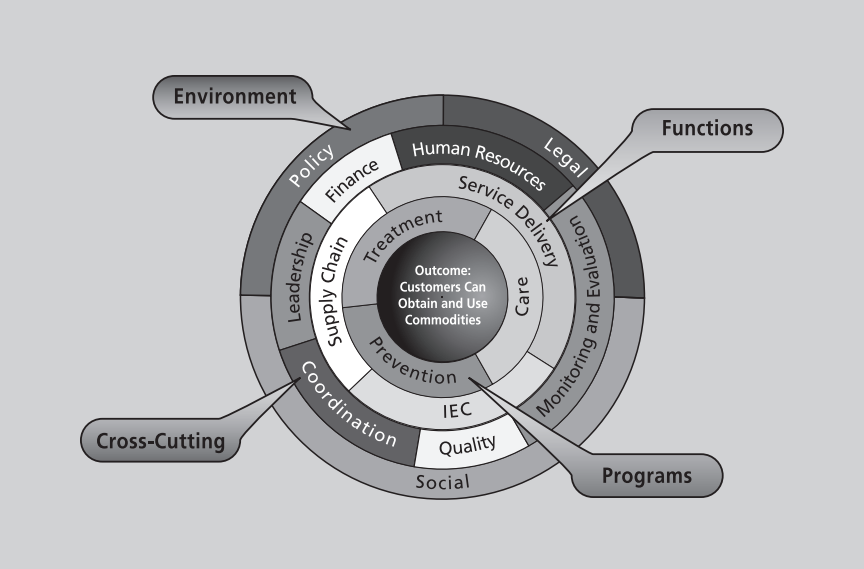
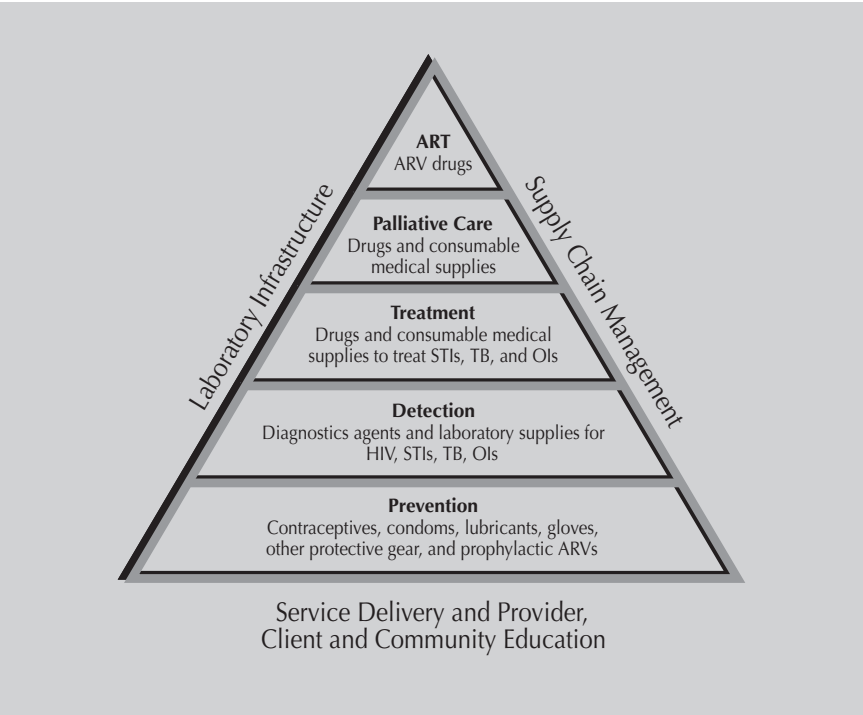


Figure 2.
A Comprehensive HIV/AIDS Program



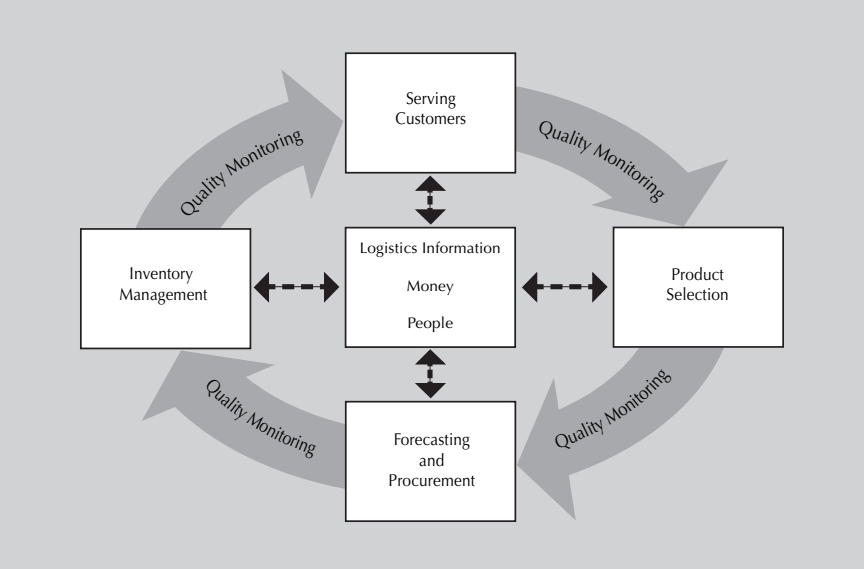
could include ART and PEP, while care will include palliative care and tuberculosis (TB) treatment. Note that many of these programs will overlap the general categories; OI treatment, for example, can be considered as both prevention and care. These programs are the interface by which clients obtain and use HIV/AIDS commodities and services. The types of programs available will vary with the particular epidemic in a given country and the resources available. Each program may involve various sectors—public, commercial, and not-for-profit.

The next circle depicts the programmatic functions that must be fulfilled. All of the programs in the innermost circle require most or all of these functions. They include the supply chain (logistics) with its individual elements (figure 3), service delivery to end users, and IEC.

The next circle in figure 1 depicts the cross-cutting issues that affect all programs and, hence, commodity security. The framework addresses six critical cross-cutting issues: the necessity for leadership at all levels, the availability of sufficient financing for all aspects of programming, coordination between all stakeholders, the quality of all commodities and services, the existence of adequate monitoring and evaluation for all activities, and the availability of adequate human resources for all functions. Finally, the whole framework rests within a policy, sociocultural, and socioeconomic environment that affects everything and that must be considered for every intervention. This environment is represented in the outermost circle of the framework.

The complexities involved in developing a national response to HIV/AIDS have seen much emphasis on improving coordination (box 1). The development of the "Three Ones"—one agreed framework, one HIV/AIDS coordinating authority, and one agreed monitoring and evaluation system for each country—has been

Figure 3.
Logistics Cycle



one product of that effort. HIV/AIDS commodity security should be part of this coordinated approach. An HIV/AIDS commodity security strategy should support any existing national strategic framework and complement any other strategic plans, for example, in areas such as quality assurance (QA) or service delivery. Depending on the circumstances, commodity security strategy may be part of another broader strategy or a standalone document that references and supports other strategic plans. The breadth of issues to be considered to ensure HIV/AIDS commodity security does not mean that a plan needs to explicitly address in detail each of those areas. For instance, it could focus on the supply chain if other functional areas are included in other detailed strategies.

Box 1.
The National Strategy in Ghana

As in most developing countries, Ghana's national HIV/AIDS response is guided by a national strategy, the National HIV/AIDS Framework. The current framework covers the period 2001–2005, and a new framework for 2006–2010 is being completed. This framework identifies priority issues and strategies. Ghana is currently developing an HIV/AIDS commodity security strategy to address specific commodity-related issues, and this strategy is intended to complement and be subordinate to the National HIV/AIDS Framework. Ghana also has several other related strategies, such as a plan to address human resource issues, and the commodity security strategy will also complement those strategies.

HIV/AIDS Commodity Security: Obtain and Use Commodities

The ultimate goal of HIV/AIDS commodity security is that customers can obtain and use the quality commodities they need when and where they need them. Customers include both end users and intermediate users—in other words, the medical staff members (doctors, nurses, pharmacists, technicians), and others who use, prescribe, or dispense the commodities. A point worth highlighting is that the total list of HIV/AIDS commodities needed for an effective ART program includes a lot more than just ARV drugs. Policymakers and program managers have identified the need for an integrated approach to HIV/AIDS prevention, treatment, and care—with effective programs for all three. Thus, a full range of commodities to support all programs is needed. Commodity security for HIV/AIDS depends on the availability of all commodities for all types of programs (box 2).

Box 2.
Ensuring Commodity Security in Malawi

Initially, the ART program in Malawi focused on providing a very limited number of first-line regimens to patients. Most facilities were initially restricted to one or two first-line regimens mainly supplied as fixed-dose combinations. As the program scaled up and Malawi began to provide more second-line and alternative regimens to address the needs of those patients experiencing treatment failure, the realization came that laboratory services did not have a constant supply of reagents, kits, and consumables or the equipment needed to fully support treatment—for example, equipment for detecting treatment failure). HIV/AIDS commodity security is not just about providing a range of first- and second-line treatment regimens for ART but also about strengthening laboratory systems to ensure commodity security for laboratory services, as Malawi is now undertaking to do.

Figure 2 illustrates the types of commodities needed to support programs that deal with HIV/AIDS prevention, treatment, and care. The pyramid does not imply that any one category is more important than another; rather, it reflects loosely the order in which the various commodities have been made available, in turn following the order in which HIV/AIDS programs historically have been implemented. At the base of the pyramid are condoms and other products for prevention, followed by test kits for HIV testing and drugs for treatment of sexually transmitted infections (STIs), PMTCT, and palliative care. At the apex are the ARV drugs needed for providing ART. For each category, associated needs exist for laboratory reagents and consumables. An effective national program needs all of these types of commodities. Each constituent program will not need them all, but it will need at the very least to be able to refer clients to programs where they can obtain such commodities. The items mentioned in figure 2 are illustrative; noting here exactly all of the commodities needed would be impossible. The exact product mix needed will be determined by the epidemiological profile in a country or area; the available financial resources; staff availability and capacity; and supply chain, laboratory, and service delivery capacity.

HIV/AIDS Programs

A comprehensive response to HIV/AIDS involves a wide range of programs, and linkages and synergies between those programs. And although not noted in the framework, each program may include more than one sector—public, private, nongovernmental, faith based, and so on. Within each program will be various support services, one of which is laboratory services.

The initial focus of HIV/AIDS interventions in developing countries was on prevention and palliative care, including treatment of (some) opportunistic infections. The importance attached to HIV testing drove the development of easy to use, cheap and quick HIV "rapid" tests and the subsequent roll-out of VCT programs for HIV. This focus on prevention (including testing) and care was for economic and practical reasons. Treatment was expensive, and developing countries were thought to lack the infrastructure and capacity to offer treatment. Rapid and steep decreases in the prices of ARV drugs brought them within the financial reach of more countries, and innovative treatment programs showed that treatment could be offered successfully in resource-constrained settings. Apart from the moral imperative to offer treatment, public health experts and health economists recognized both a public health imperative, in that the availability of treatment meant people were more likely to seek to know their HIV status and to practice safer behavior, thus reducing HIV incidence, and an economic imperative, in that treatment could prolong the productive lives of those infected—often among the most productive members of society.

Now, most experts recognize the necessity of an integrated approach in offering HIV prevention, treatment, and care services. If treatment is not available, prevention efforts are compromised because people are reluctant to undergo testing to find out their status. PMTCT programs are more successful when they can also offer treatment, while rapid scale-up of ART is impossible unless people are tested. Mirroring this need for comprehensive programs, overall HIV/AIDS commodity security for a country can be achieved only when each program achieves commodity security, and any commodity security strategy needs to address all HIV/AIDS programs and commodities.

Programmatic Functions

HIV/AIDS commodity security depends on capacity existing in certain programmatic areas. The framework highlights three main areas—supply chain (logistics), service delivery, and IEC—though others may exist. Although the supply chain obviously has the most direct effect on commodity availability, decisions made in the other programmatic areas—or not made, as the case may be—have consequences for commodity security and must be considered in that context. It is beyond the scope of this paper to consider all the complexities of, for example, HIV/AIDS service delivery. Rather, we will show briefly how these three functions can affect HIV/AIDS commodity security.

Supply Chain Functions

A well-functioning supply chain capable of selecting, forecasting, quantifying, financing, procuring, and delivering the commodities needed is a prerequisite for any effective HIV/AIDS program. In itself, the supply chain is not sufficient to

ensure commodity security, but without it the other investments made in service delivery, IEC, and policy are not going to achieve their intended program goals. Like any other chain, the supply chain is only as strong as its weakest link. HIV/AIDS commodity security depends on each of the following elements of supply chain management:

- Selection
- Forecasting
- Procurement
- Finance
- Inventory management (including storage and distribution)
- Logistics management information system (including monitoring and evaluation)

The supply chain is likely to be the main focus of any commodity security initiative. When focusing on the technical aspects of the supply chain, we must also consider some of the cross-cutting issues noted in the framework, either as part of the supply chain or separately. For instance, policy barriers may exist to implementing technical solutions on procurement. Or insufficient financing may be available for supply chain functions.

Service Delivery

Simply providing commodities does not guarantee commodity security. Adequate service delivery ensures that clients receive the commodities they need along with adequate information and supportive services from trained providers, all in a proper environment, leading to proper use.

The goal of the supply chain is to respond to the changing need for commodities at the service delivery level—to provide the right commodity, in the right place, at the right time. Thus, the pattern of prescribing and dispensing commodities at the service delivery level affects the effective implementation of a supply chain for those commodities. Using standard treatment guidelines not only helps quality of care but also makes forecasting, procurement, and resource mobilization much easier. If no standard organizing system exists for identifying, enrolling, and treating people living with HIV/AIDS, then the pattern of supplying commodities will be unpredictable and inconsistent across regions. Access to care will be inequitable, and forecasting will be difficult given how mobile segments of the populations are. Therefore, a clear national policy that provides consistent, orderly, and equitable standards for delivery of HIV/AIDS services and care is important.

Furthermore, related health care services, such as VCT and TB, STI, and OI prevention and treatment, also affect the supply chain. Some activities can stimulate additional demand for commodities that falls outside of normal forecasting; a large HIV prevention campaign, for example, can increase demand for ART. Some activities share the same products, such as HIV test kits, which are needed for both VCT and ART. Still other services can reveal disease trends, such as an increase in HIV as seen through higher STI prevalence or increasing drug resistance through increased cases of OI. Because these services often operate independently, policies should exist to motivate these services to share information, plan together, make referrals to each other, and even share procurement of identical commodities.

Information, Education, and Communication

Although providing quality commodities and services could be considered the key interventions for HIV/AIDS commodity security, communications and education activities are also critical. Just to give one example, client education about ART is essential to ensure proper treatment adherence and optimal treatment outcomes. Otherwise drug resistance can emerge, and inconsistent demand can cause oversupplies or commodity stockouts. IEC is also one of the mainstays of HIV/AIDS prevention campaigns.

IEC is not just about client, or patient, education. It includes providing information to caregivers, communicating to all stakeholders on their roles and responsibilities, advocating for resource mobilization, and so on. To ensure the necessary institutional and public support for the supply chain of HIV and ART commodities and for the provision of HIV and ART services, all stakeholders must understand and receive communication about the priorities and policies of national programs. Without this communication, stakeholders may be unable or unwilling to provide the supportive behavior necessary to enable the supply chain functions to operate smoothly.

Cross-Cutting Issues

A range of issues that underpin and support all of the programs and functions previously noted must be considered to ensure HIV/AIDS commodity security.

Financing and Resource Mobilization

Policymakers need to ensure that adequate financing is dedicated to all programs and functions. Financing of the commodities is important but not sufficient. For commodity security, adequate resources must be devoted to infrastructure, capacity, and human resources at all levels and for all programs. Unless the supply chain is adequately financed, commodities will not get to the people who need them; or if resources are not devoted to IEC, then adherence efforts will be compromised.

In terms of resource mobilization, policymakers and program managers need to carefully consider their available resources over the short and medium term and decide on the numbers of clients to enroll in programs accordingly. The consequences of being unable to finance commodities for all patients enrolled are severe. Decision makers must weigh the need to offer life-saving treatment over the short term to as many people as possible against the necessity to sustain treatment over the medium and long term for those who are put on treatment.

Forecasting for HIV/AIDS commodities can provide useful advocacy tools for policymakers, identifying funding gaps and quantifying financing needs that can then be presented to technical partners.

Coordination

Most countries face a complicated system of programs and supply chains for HIV/AIDS commodities. They serve multiple vertical programs with independent procurement, storage, and distribution functions, in public, private, and nongovernmental organization sectors. As a result, ensuring an effective supply of commodities as part of the national response to HIV/AIDS is very difficult and requires a

clear policy of concerted coordination between the programs in all sectors. In addition, to ensure that the supply chain and programs meet the needs of all stakeholders, they must participate in this coordinated effort.

Coordination involves all sectors (public, commercial, not-for-profit, and others) and all stakeholders (ministries, donors, civil society, nongovernmental organizations, and corporations). Obvious benefits accrue to national programs in having cooperation and sharing of information between the private and public sectors. For instance, by including service statistics from the private sector, policymakers and public health experts can obtain a better understanding of the epidemic in their country. Better international advocacy can take place, and there are potential benefits in procurement, service delivery, training, and resource mobilization. Because those benefits may be mainly for the national program and may not be evident or immediate enough for the private sector, creating incentives for this cooperation, or at least removing obstacles, is important. Possible incentives include access to subsidized commodities, training, or access to treatment guidelines. National programs may also elect to enlist cooperation through legislation and regulation, although if the programs lack the capacity to enforce those regulations, they may prove counterproductive.

Quality Assurance

Quality assurance is a necessary function of both the supply chain and of all other program elements and, as such, can be a cross-cutting issue. In terms of the supply chain, QA can be considered as the sum of all the policies and practices that ensure the quality of the commodities entering and moving through the logistics cycle. QA ensures that the right commodity reaches the right place in the right condition. The supply of quality commodities cannot be guaranteed without concrete QA measures. Sound policies are needed for the development and implementation of sound practices. Equally, all other programs and systems need sound QA policies and procedures to ensure that clients get the quality products and services they need.

Monitoring and Evaluation

Monitoring and evaluation is a cross-cutting function that is needed for all programs and functions to ensure commodity security. National programs and their constituent functions must be capable of measuring progress and outcomes if they are to ensure that targets are being met and to determine the corrective actions to be taken.

Leadership

Only through strong leadership, at all levels, can HIV/AIDS commodity security be ensured. Leadership must begin at the highest levels of government to ensure the development of clear and transparent policies and to provide the resources—both financial and technical—to guarantee their implementation. Without strong leadership, effective coordination will not exist between different programs, different sectors, and different technical partners. Many countries have consolidated the responsibility for coordination of all HIV/AIDS policies in national HIV/AIDS authorities or councils. Such bodies are responsible for working with health ministries (and all other ministries), civil society, and technical partners to ensure a coordinated and comprehensive HIV/AIDS response.

Many countries have decentralized decision making to provincial, regional, and district levels, and there, too, strong leadership is needed. Civil society, religious, and traditional leaders as well as civic organizations must support the national HIV/AIDS response. Leadership and commitment are needed first to develop policies, then to devote the resources needed, and finally to support and follow through on the implementation of those policies. Without that commitment, HIV/AIDS programs and the strong supply chains that support them cannot be developed or sustained.

Human Resources

Human resources—or the lack thereof—is probably one of the greatest constraints facing HIV/AIDS programs in developing countries. Countries have problems finding, training, and retaining skilled medical personnel. If personnel are insufficient to dispense the commodities supplied or maintain the forms required to track their use, the supply chain and commodity security will be compromised.

All stakeholders need to address the human resource problem to achieve their goals. This issue applies to all programs and functions. As with HIV/AIDS commodities, the focus initially is often on training ART providers, with a later realization that ensuring commodity security also requires the training of support staff members, such as supply chain managers and laboratory personnel.

Environment

HIV/AIDS programming does not exist in a vacuum; rather, it is affected by and in turn affects a complex policy, legal, and socioeconomic and sociocultural environment.

Policy Environment

National policies and regulations have consequences for the ability of programs to provide HIV/AIDS commodities and services. Some policies may be supportive, whereas others may act as barriers to achieving commodity security. For instance, policies that limit the provision of HIV testing with rapid tests to qualified laboratory technicians can have negative consequences for the availability of testing services in countries where few such staff members exist. Pricing polices for laboratory services can affect uptake of ART. Policies and guidelines on treatment regimens have major consequences for the availability of ART regimens.

Socioeconomic and Sociocultural Environment

The broader country environment—from the social factors such as the general level of education, to economic factors such as income levels, to broader health factors such as HIV prevalence—also affects commodity security. Cultural beliefs on disease and health care in general affect all aspects of programming. Adherence levels may be influenced by the degree of social support patients receive. Stigma may affect rollout of various programs. HIV/AIDS programming may need to compete with other national priorities for resources.

Conclusion

An effective and sustainable HIV/AIDS response requires a wide range of commodities supporting a range of programs that encompass prevention, care, and treatment. Each program requires a strong supply chain to ensure HIV/AIDS commodity security—that is, to ensure that HIV/AIDS commodities can be obtained and used when and where they are needed. However, supply chains alone cannot ensure HIV/AIDS commodity security. A framework for HIV/AIDS commodity security shows how the supply chain works with programmatic functions such as service delivery and IEC. Each element of an HIV/AIDS program, including the supply chain, must be underpinned by a supportive policy environment, adequate financial and human resources, a legal framework, and an institutional environment that sustains and supports the program. And there must be leadership and commitment from all to implement policies and programs. A commodity security approach to HIV/AIDS commodities can be an important tool in ensuring the success of countries' efforts against the HIV/AIDS pandemic by helping guarantee the availability of commodities over the short and long term.

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