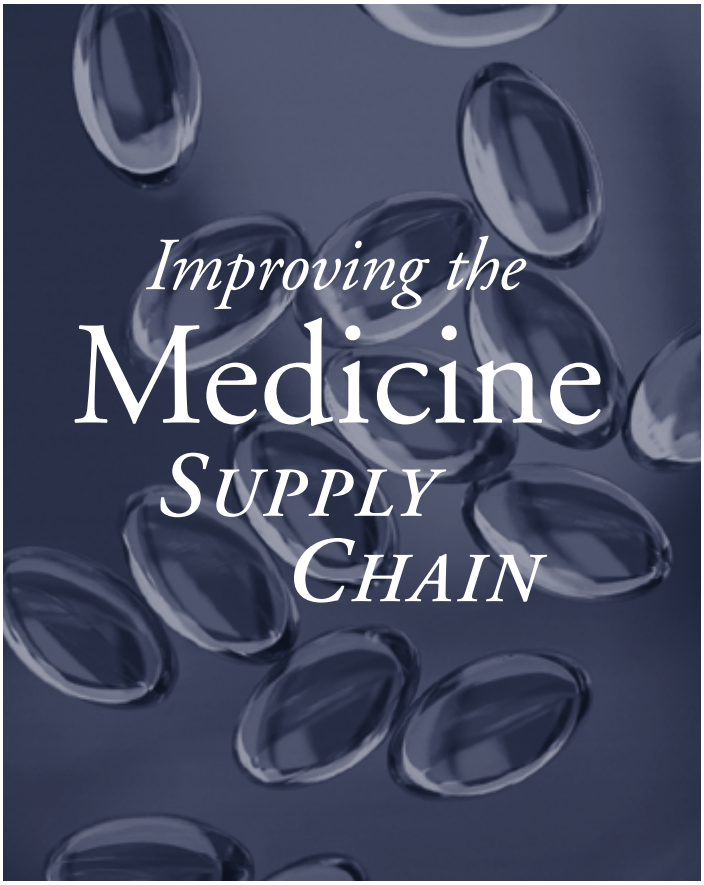
An Imperative for
Public Health Care



A.T. KEARNEY

Introduction

Medicines play an important role in public health care programs, saving lives and drawing people to health facilities, where they can also receive preventive treatment. Medicines can also help keep health care costs down. Many insurance carriers would rather pay for drug treatment than for potentially risky and more expensive surgery. And the cost of complications from not treating illness with medicine in the early stages can ultimately be double or triple the expense.

But the high cost of medicines is putting increasing pressure on health care budgets. For example, in many industrialized nations the elderly population (those older than 65) is expected to double in the next 50 years. Usually, this segment of the population has approximately four times the health care expenditures of those under 65 years. Additionally, in many developing economies, the epidemiological profile is changing—evolving from infectious and less expensive diseases, which can be treated through massive national campaigns, to chronic degenerative diseases such as cancer and diabetes, which are more expensive to treat.

Adding to the problem, most public health care programs supply drugs through internal, antiquated and complex supply chains. As a result, critical drugs may not be available when patients need them. These factors, when combined, mean that public health care programs face a massive struggle in providing patients with a consistent flow of medicine, while keeping costs down and maintaining high levels of service.

This paper discusses ways to improve the medicine supply chain in developing countries. It offers a seven-point solution to relieving pressure on health care budgets in these countries, while reducing the cost of medicine and improving key elements of the drug supply chain.

THE PRESCRIPTION

Public health programs cover the health care costs of much of the population worldwide. For example, in Latin America, on average, 52 percent of the health care budget in 2000 was paid for by public funds *(see figure 1)*. Unfortunately, these funds are not sufficient to meet the needs of growing populations—and are dwindling further due to the many economic crises of the past three decades.

Today, as nations strive to make medicines available and affordable to all citizens, and simultaneously run a cost-effective organization, they face an array of complex issues—from lack of availability and high prices, to antiquated supply chains and erroneous medical prescriptions.

Despite the challenges, a number of countries are making progress in important areas. Indeed, in our research and experience working with countries and public health care organizations around the world, there are seven elements, or best practices, that are key to reducing costs and improving service levels in the drug supply chain.

1. Adopt a national drug strategy

Taking a big-picture view of their situations, leading countries have adopted a national drug strategy. These strategies specify the goals set by the government for the pharmaceutical sector, their relative importance, and the main actions needed for attaining them. They reflect the commitment to an objective and offer a guide for action. By 1999, according to the World Health Organization, 66 countries had formulated or updated such a strategy in the past 10 years, up from just 14 countries in 1989.

The goals of a national drug strategy are fairly general and relate to three issues: access, quality and rational use of drugs. For example, one goal might be to make essential medicines available and affordable to those who need them. However, the strategies for achieving the goals are quite specific: The public sector can improve the supply of essential medicine by increasing the budget, introducing cost-sharing mechanisms or allocating more resources to underserved populations and areas.

Goals and strategies will vary from one country to another due to structural differences in the health care systems. In developed countries, access to medicines is not a dominant issue, so the goals and strategies will focus more on containing costs. For example, the Canadian government created a national drug strategy to encourage the use of generic drugs to help reduce costs of the medicines—a strategy that generates annual savings of more than US$1 billion for the government.

In less-developed countries, where total spending on pharmaceutical products is low, the goals and strategies tend to focus on increasing government spending and coverage of medical services. For example, Mexico recently initiated Popular Health Insurance to provide medicines and medical services to the poorest people in the country, while generating additional and much-needed funds.

Once basic components of a policy have been identified, choices must be made about the most appropriate activities for each level of the system. Countries can choose from a number of different approaches. Tanzania developed a five-year master plan for its pharmaceutical sector, which outlines both the general approach and specific activities, such as budget details and responsible agencies. Other countries break down the various strategies and implement different plans for different agencies.

The decision regarding which approach to take is largely political; it depends on timing and the support the current government has from different stakeholders. For example, when political leaders enjoy a stable environment and the favor of their constituents, they can generate a master plan that communicates the sector's desired direction over the long term. In more difficult situations, the best option may be to generate a one-year plan for different agencies.

The following are four elements of a successful drug strategy:

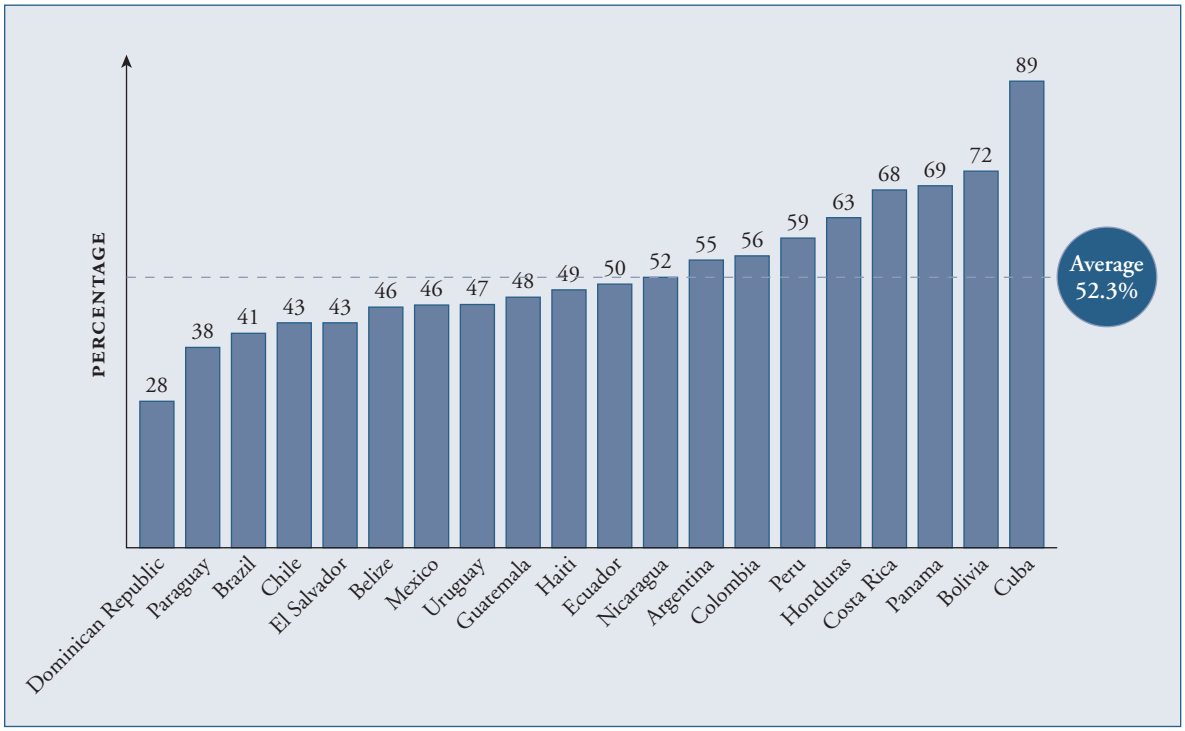
• Determine the appropriate timing, combination of approaches and methods of implementation. For example, the Philippines established generic labeling and promotion rules before it put in place a plan to prescribe and dispense generic drugs. Thus, by the time doctors and pharmacists were required to switch to generic drugs, the products in pharmacies were already labeled, thus sidestepping any potential confusion.

• Adopt a flexible policy. In certain cases, it may be necessary to postpone one activity to promote future cooperation.

• Use experts to guarantee and vouch for the policy's technical soundness.

• Obtain buy-in from consumers, the media and other key groups before implementing new drug initiatives.

Figure 1: Percentage of health care expenses covered by national governments



Source: World Health Organization

By implementing best practices in demand planning and inventory management, public health care institutions can better allocate financial resources and make vital medicines more widely available.

Also, when developing a national drug policy, it is important to involve all stakeholders in the process, including other government agencies such as departments of commerce, industry, education and foreign relations. Most countries also involve participants from the national and international pharmaceutical industry, the medical profession, and pharmaceutical distributors and retailers. All participants must be committed to the effort and remain committed until the desired results are achieved.

Argentina is a good example of a successful implementation. In 2002, amid one of its worst economic crises, the country introduced a national drug strategy to improve access to medicines for the poorest population in the country. The government employed a two-pronged strategy. First, it mandated the use of generic drugs to encourage competitive pricing, creating a law that requires all prescriptions to be written using the drug's generic name or international common denomination. Armed with the generic name of the medicine they need, patients are free to choose the most cost-effective option. This new law has helped reduce the cost of medicine and spending in health services.

The second pillar of the strategy was the free distribution of essential medicines to the country's primary attention centers (these are non-hospitalization centers). Financed by the Inter-American Development Bank, this program is designed to benefit people who do not have the resources to buy prescribed medications. The drugs included in this initiative treat the majority of illnesses diagnosed in the centers.

The strategy has been a success. In just six months, treatment for high blood pressure that used to cost US$34 dropped to US$16.46. Figure 2 on page 6 shows the maximum price reductions achieved in Argentina on a list of commonly prescribed ingredients as a result of its national drug strategy.

2. Create an essential drug list

Between 3,000 and 4,000 drugs are registered in any given country, and close to 70 percent of the drugs registered on the world market are duplicative and nonessential. In response to these problems, the World Health Organization (WHO) issued a model list of essential medicines. This list names the drugs needed to satisfy the health care needs of a majority of the population safely and cost effectively.

Ideally, a national list of essential drugs should include between 300 and 400 drugs; a district hospital—one that treats large communities and has several specializations—should have between 150 and 200 drugs on its essential list, a health center should have 40 to 50, while a dispensary should have 20 to 30 drugs on its list. Clearly, the shorter the list, the easier it is to provide drugs to patients, and the lower the acquisition costs. Also, the fewer drugs patients take, the easier it is for them to follow the treatment.

While many countries have adopted a list of essential medicines, few countries follow all of the guidelines. For example, until recently, national hospitals in Malaysia had more than 1,000 drugs on their list of essential drugs, while a typical health center had up to 136 drugs. To make matters worse, many countries add new medicines to the list as they are introduced, but often fail to drop old medicines from the list.

But the size of an essential drug list is not the only factor. The list needs to balance prescription drugs that cure ailments with preventive drugs. At the same time, doctors must agree with the list. If physicians continue to prescribe

drugs that are not on the essential drug list, it will be difficult, if not impossible, to succeed with a national drug strategy.

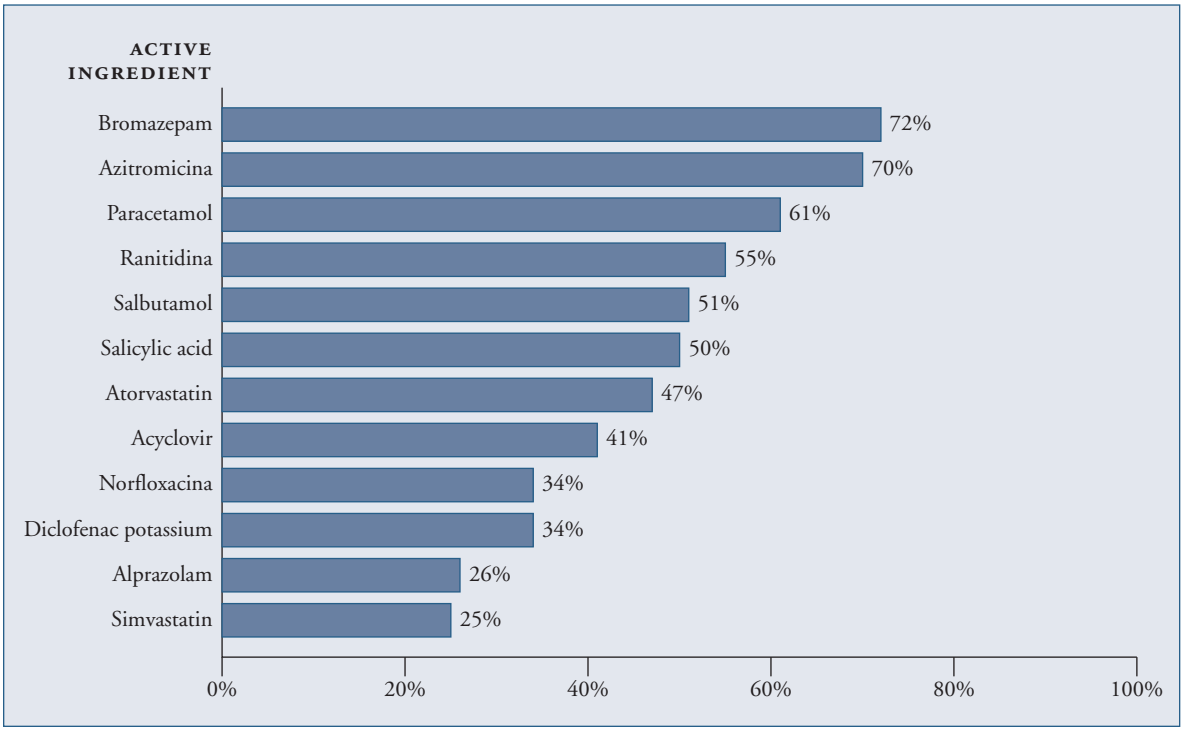
Furthermore, when generic drugs are included in the list, countries can achieve significant cost benefits. For example, when Canada's prescriptions for generic drugs (from 1990 to 2002) rose by 14 percent, the country's annual acquisition costs for medicine dropped by US$1 billion *(see figure 3)*. In Chile, the introduction of generic drugs cut its annual acquisition costs by US$64 million, or nearly 10 percent of the country's total medicine expenditure.

Still, adding generic drugs to the essential drug list will introduce several new challenges. Countries must monitor the development of generic drug suppliers, guarantee controlled processes to ensure drug quality (testing their bio-equivalency and bio-availability), and employ massive communication campaigns to promote the use of generic drugs among doctors, pharmacists and patients.

3. Impose controls on drug use

Rational use of medicines is crucial to securing the effectiveness of a country's drug supply and is one of the best sources of savings in the medicine supply chain. Determining rational use involves ensuring that medications are appropriate for patients' clinical needs, in doses that

Figure 2: Cost reductions achieved through Argentina's national drug strategy (2001 to 2002)



Source: Argentina Health Ministry

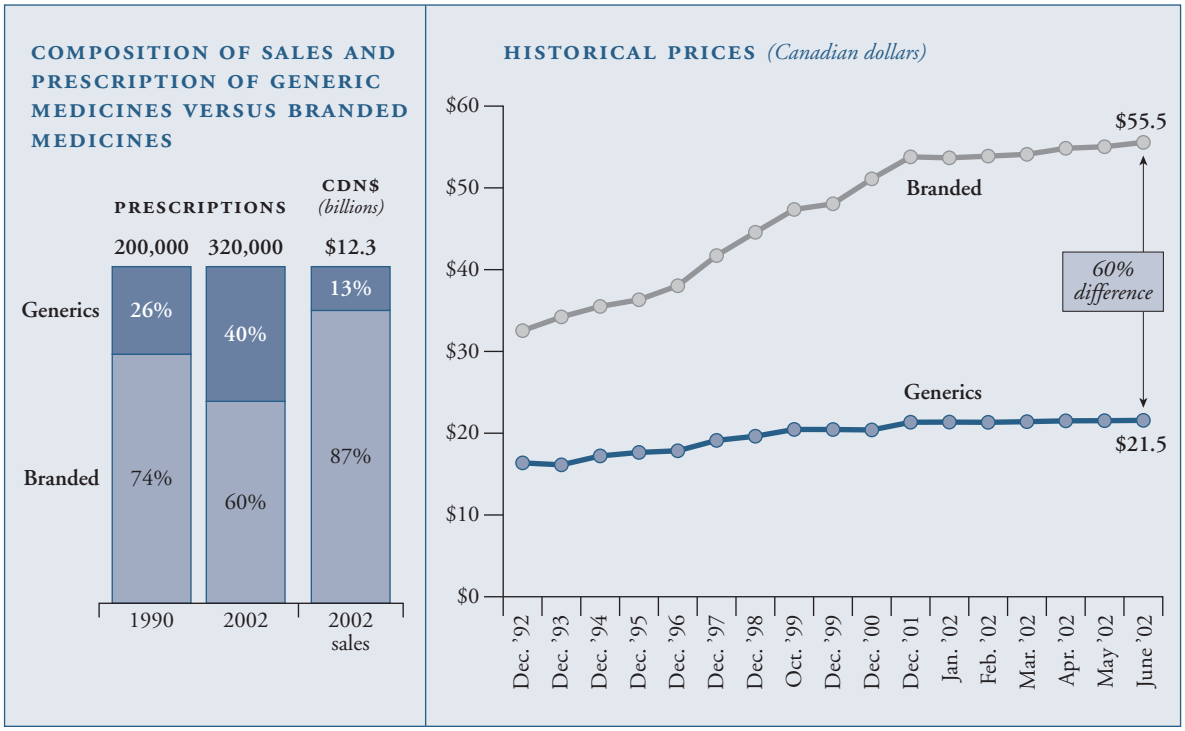
meet their own requirements, for an adequate period of time, and at the lowest cost to them and their community.

In the future, all health systems are expected to impose controls on demand for drugs. These controls will include setting treatment protocols, monitoring productivity and establishing therapy guidelines. (Therapy guidelines refer to types of drugs, dosage and frequency, which are tailored to meet patients' needs.)

Mexico has already established rational use drug controls. The Institute of Social Welfare and Services for State Employees (ISSSTE) created therapy guidelines for the 30 most common ailments as well as for the 10 most expensive. Treatment protocols have been established by a representative sample of doctors. These doctors also formulated the essential drug list for ISSSTE based on approximately 450 drugs for all three levels of specialization (basic, common specializations and highly specialized). These guidelines have been sent to all doctors, who are expected to prescribe accordingly.

In addition, the ISSSTE helps control demand for prescriptions by determining real needs for drugs. The institute compares demand and consumption to productivity, basing its conclusions on doctor visits and hospital utilization. The ISSSTE also created a simple inventory control system that compares therapy guidelines

Figure 3: Savings in Canada from generic drugs



Source: IMS Health Canada and Canadian Drug Manufacturers Association

with expected productivity. Despite the change management challenges in implementing such controls on demand, the results have been positive. For example, one general hospital, Lopez Mateos, reduced its annual budget by 30 percent after adopting rational use controls on medicines.

Indonesia faced a similar problem more than a decade ago. A national drug utilization study revealed that the country was focusing on the availability of essential drugs rather than on appropriate prescribing practices, concluding that there was an ineffective use or an overuse of drugs. To fight the problem, the country developed and implemented training programs on the rational use of drugs.

In general, countries that employ rational use controls on medication should plan for constant training and supervision of the new regulations. In addition, drugs prescribed should be limited to those on the essential drug list and should follow standard therapy guidelines.

4. Consolidate the drug procurement process

A simple, consolidated and transparent drug procurement process can yield significant benefits for a country both in reducing costs and improving services. For leading public health organizations, the focus should be on centralizing purchases, simplifying processes and increasing transparency. Health organizations should also strive to eliminate differences between the characteristics of the products that they buy. For example, there are many situations in which institutions buy the same medicines at different prices. Often, the only difference is in the packaging.

Guatemala is a good example. To cut costs and improve service, Guatemala established an inter-institutional drug commission. Members of the commission include representatives from the public institutions of health and social security, the pharmaceutical industry and international health organizations. The members' first major effort was to centralize the drug procurement process, consolidating drug requirements of the entire health sector and negotiating drug prices and quantities. All participants in the process are responsible for executing their own contracts with national and international pharmaceutical firms, and drugs are distributed at central and peripheral hospitals and other medical facilities.

Guatemala's initiative yielded impressive benefits:

- The Ministry of Health saved 65 percent in medicine purchases.
- The Institute of Social Security saved 23 percent on medicine purchases.
- Roughly 90 percent of health institutions buy their drugs within the consolidated contract.
- The quality of drugs improved due to random inspections at hospitals and medical centers.
- The selection of drug suppliers improved due to regulatory changes.

Clearly, purchasing medicine is not a simple matter. Public health organizations must also establish high standards of ethics in their procurement processes, ensure quality of products as well as of the distribution and delivery services, and eliminate deficiencies in the government's payment system.

Institutions can either implement these changes internally or use group purchasing organizations. For example, the United States, Chile and Canada use group purchasing organizations to consolidate drug purchases. These organizations, which can be for-profit or nonprofit, help increase price transparency and reduce costs.

Of course, no improvement initiative will succeed without willing participants. Leading governments use relevant incentives to gain buy-in from all stakeholders.

5. Adopt demand planning, inventory management techniques

To have the right drugs in stock, health care facilities must accurately predict the medicines they will need and diligently manage the supplies they have. In Mexico, for example, a recent study revealed that more than 50 percent of the undersupply of medicines can be attributed to problems in demand planning and inventory management.

Demand planning. For most countries, the main problems surrounding demand are caused by inconsistent methodologies and a lack of understanding of the real demand for each hospital or health center. This is particularly evident in developing countries.

There are two popular methods to estimate demand for medicine; the best method to use will depend on the information available and the level of accuracy required. The consumption method uses historical data of medicine use to predict future needs. Although it is the most accurate method, it can only be used if health organizations have reliable information on past demand.

For countries with limited historical data, the morbidity method is the next best option. This method forecasts demand for medicines based on the expected number of diseases and their treatments. This requires reliable morbidity data, knowledge of the expected number of patient visits per morbidity, and planned guidelines for each treatment. Because developing countries usually have little historical data, the morbidity method is often a good starting point to estimate demand. For example, in 1987, a team led by the WHO applied the morbidity method in Zimbabwe to estimate national drug requirements and costs.

Health care institutions in Mexico also used the morbidity method to improve demand planning. Given the lack of reliable data, hospitals and health centers classified the expected causes of morbidity. Doctors and administrators agreed on the medicines to be prescribed for each treatment and calculated the expected number of patient visits for each disease. The data was analyzed and converted into a forecast for the annual demand for medicines. Doctors and administrators validated the results and made appropriate adjustments. Today, using this method, public health care officials in Mexico achieve an 80 percent accuracy rate in their drug forecasts. As Mexico keeps better records of drug usage, in several years it expects to be able to apply the consumption method to more accurately estimate demand for medicines.

Inventory management. Implementing best practices in inventory management can improve overall service levels and reduce costs in the drug supply chain. Two methods stand out, which are defined by the level of the supply chain that orders drugs *(see figure 4)*. In a pull system, each level of the supply chain determines the drugs and the quantity to be ordered by using a formula that considers demand patterns, distribution frequencies, costs, inventory levels and other relevant factors. This is the preferred method because it allows more flexibility and orders are sent based on real consumption data. In a push system, a higher level in the supply chain determines the drugs and their quantity. This approach is only recommended in relief situations when there is insufficient lower-level staff to determine orders.

Mexico, once plagued by inventory management problems, used a pull system to gain a clearer picture of its drug supply network. Before this, different public health care institutions had limited visibility into the available

drugs in a central warehouse and at hospitals and health centers. With poor estimates of inventory levels, drug deliveries were made annually, semiannually or every three months, instead of on a more frequent or as-needed basis. While some health care centers had excess inventories, others lacked critical medicines.

With a pull system, rather than have a central warehouse order and ship medications, hospitals and health centers in Mexico now order their own medicines. They increased the frequency of deliveries to once per month and improved their stock management process.

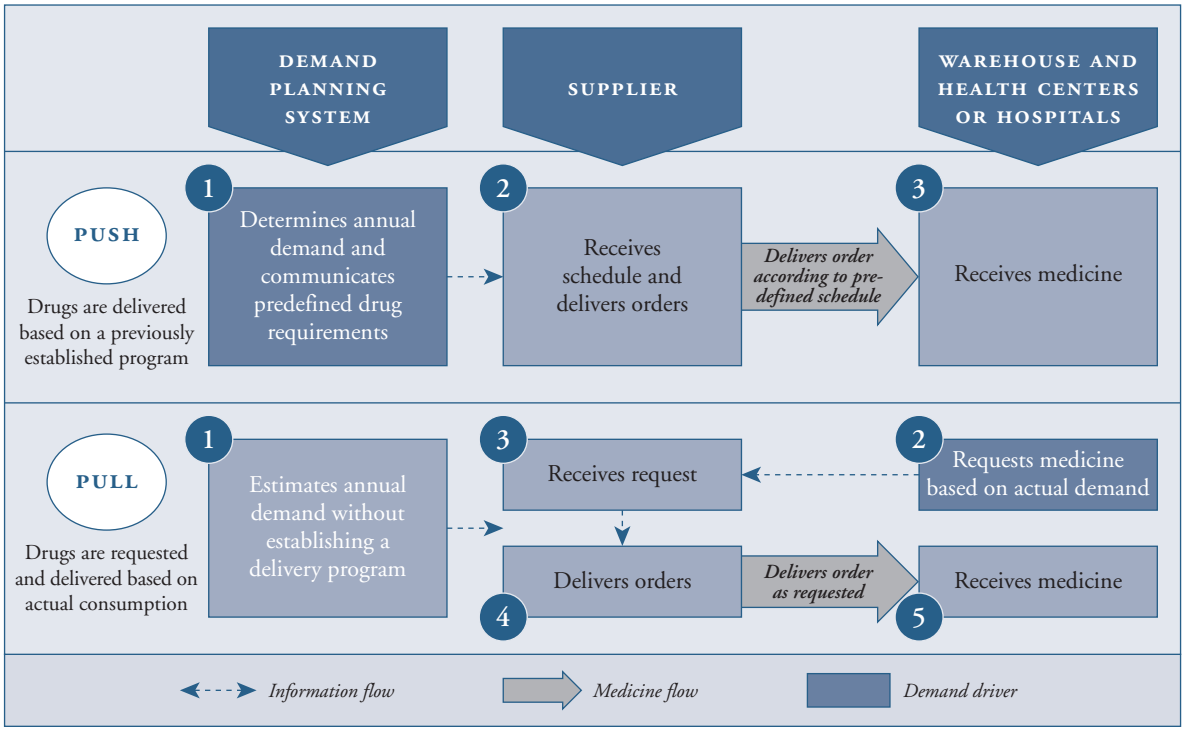
Additionally, other inventory management techniques must be handled, including defining stock records, selecting items to be stocked, maintaining a balance between service levels and stock levels, and adopting a model for reordering medicines.

By implementing best practices in demand planning and inventory management, public health care institutions can better allocate financial resources and make vital medicines more widely available.

6. Deliver direct from suppliers

The distribution of medicines in developing countries can be complex and expensive. For example, distribution costs in the Mexican public health systems can be 30 to 50 percent higher

Figure 4: Two key approaches to inventory management



Source: A.T. Kearney

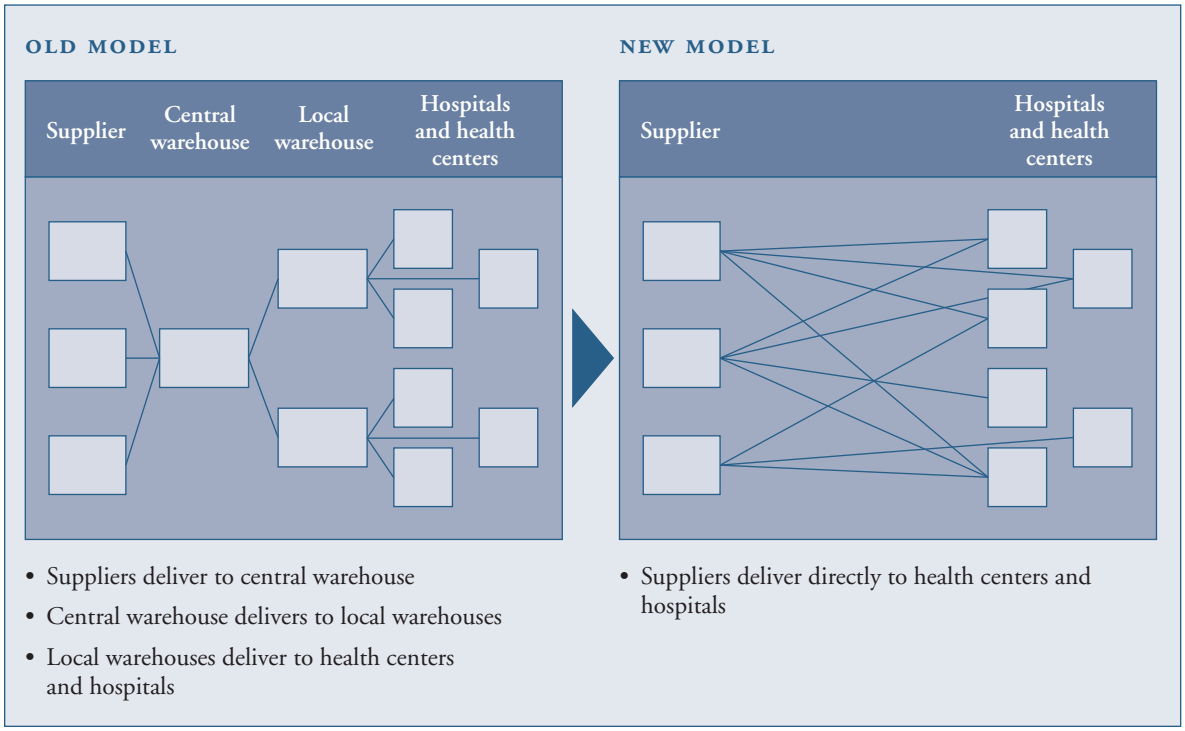
than those of private distribution and logistics companies. These costs can be attributed to an inefficient logistics infrastructure, lack of information systems and distribution complexity. For example, several states manage a central warehouse where the supplier delivers the medicine. The state's central warehouse supplies the drugs to local warehouses, which deliver them to the hospitals or health centers. Lead times are long, information systems to accurately manage the flow of medicines are lacking, and warehouses are underutilized.

To make distribution more efficient, health care institutions in Mexico piloted a process to deliver medicines directly from the supplier to major hospitals or health centers. The pilot has achieved service level improvements, such as a response of six days on average, a supplier fulfillment rate of 95 percent, and a 36 percent increase in the availability of medicines *(see figure 5)*. Another option is to mitigate the complexity and cost of moving medicines by employing third-party distribution companies, which various public health systems have adopted.

7. Build a support infrastructure

The final element in effectively managing the drug supply is to establish a solid support infrastructure that focuses on human resources and information technology.

Figure 5: Pilot program for drug distribution in Mexico



Source: A.T. Kearney

Human resources. A prerequisite to an adequate supply of medicines is skilled people who are trained to manage the procurement process. These people, working from a central office, must have a keen understanding of all aspects of the purchasing process and know how to prioritize medicines based on budgetary restrictions. In addition, doctors and pharmacists must be able to develop an accurate demand forecast and manage inventory levels to ensure availability of drugs at the various consumption points. Unfortunately, given the high turnover of personnel in many government organizations, it is a challenge to hire and retain people with these skills. This is particularly problematic in developing countries where health managers are assigned through political networks. These people are not evaluated based on their performance and have little incentive to strive for efficient resource management.

Incentives and performance measures, when used effectively, can encourage employees to act in the best interests of the patient. If at all possible, positions that demand specific knowledge of medicine supply chains should be filled with people who have an academic background and experience in this area. These people should be evaluated on their performance based on a mix of indicators—from maintaining high service levels and achieving savings targets to managing budgets—and rewarded for their efforts.

Information technology. Information technology can be valuable in managing the supply of medicine, particularly tools that are designed to support more strategic and long-term supply chain decisions. For example, the more sophisticated applications on the market today permit administrators to evaluate different supply chain network scenarios that balance cost reduction with improving service levels. Other applications help optimize the number of deliveries and manage the daily distribution of medicines—these tools help integrate the needs of each hospital or health center while compensating for the restrictions of the drug supply chain.

Other IT applications have a more operational and short-term focus, automating activities such as inventory management, distribution, demand planning and purchasing. Indeed, there are tools that allow for supply chain visibility to monitor drug inventory levels; some applications will help consolidate purchases, evaluate suppliers, analyze purchases, and compare prices across organizations, suppliers and medicines.

Given their typically limited investment and operational budgets, public health systems can often benefit by using application service providers, or ASPs. ASPs can acquire, implement, maintain and provide systems on a pay-per-use basis. In many instances, ASPs connect suppliers, hospitals and health centers, and public health organizations. They are able to leverage their infrastructure, systems and processes in a more cost-effective manner than public health care institutions can do alone.

THE HEALING PROCESS

Some countries have tried to correct specific problems—only to discover that piecemeal solutions typically fail. For example, an initiative to improve drug procurement and distribution without considering drug use may not produce the expected results. The initiative may generate savings and a better process, but the total benefits will not be achieved if overuse of certain drugs continues to lead to drug shortages.

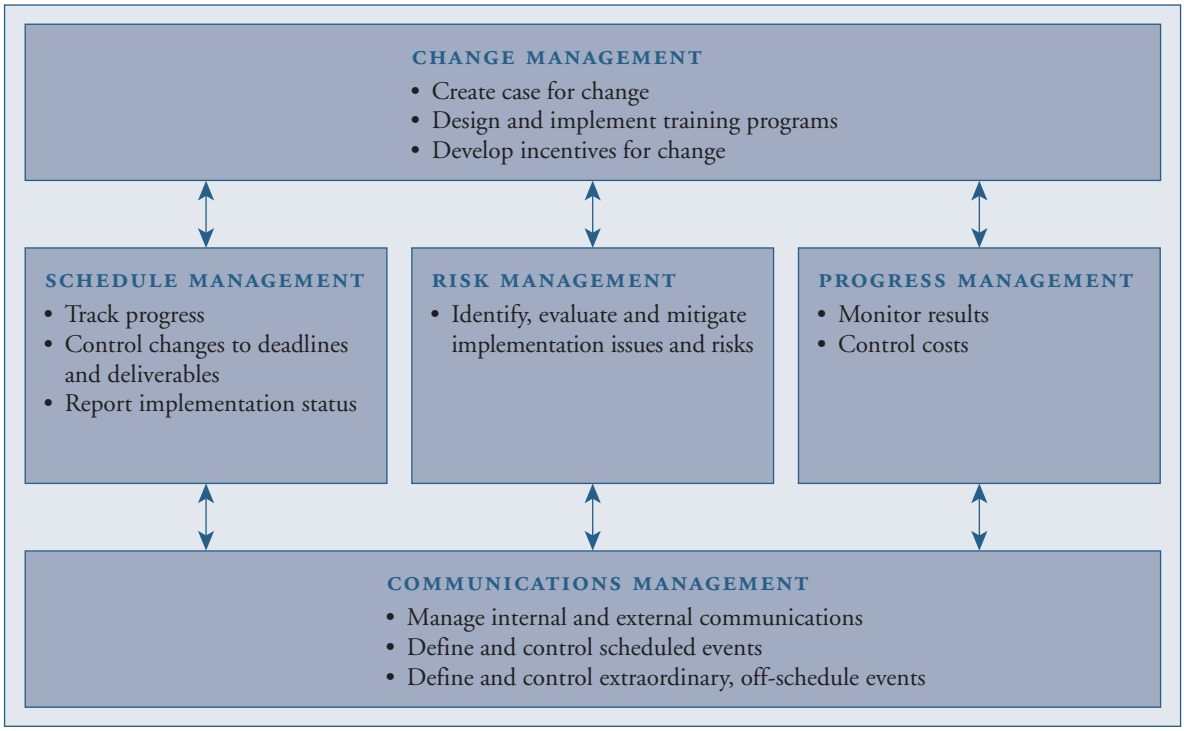
Because changing the status quo is never easy, it is often necessary to employ some elements of

change management. For example, some countries use a program management office (PMO) to manage complex initiatives *(see figure 6)*. A PMO will ensure that all of the activities are achieved during the transformation process. From the PMO, leaders are able to monitor progress, address any issues head-on and remove any obstacles. The PMO can also serve as a center to capture and disseminate best practices in project management.

In Mexico, for example, the program management office acts as an information center and liaison between the diverse stakeholders involved in implementing the national drug strategy. Information from federal and state finance secretaries, federal and state health care institutions, labor unions, the public, drug manufacturers, chambers of commerce, and associations reveals ongoing progress, results and potential barriers.

To monitor service levels across institutions, Mexico formed an inter-institutional committee. Committee members use rigorous statistical methods to determine the right indicators, sample sizes and composition, data gathering approaches and data processing guidelines. Key to the committee's efforts is a "virtual" room—a website with restricted access—where members from each health care institution go to share relevant information.

Figure 6: Key requirements of a program management office



Source: A.T. Kearney

Communication is also key to managing change in an organization. The best communication vehicles are those that are tailored to meet the needs of specific stakeholders. For example, communications in Mexico are disseminated through 13 different reports, each designed for a specific institution, and delivered through the most appropriate channels, such as websites, email or presentations.

Training is another vital element of a successful strategy. As part of the first phase of its supply chain restructuring process, Mexico focused heavily on training its employees on a new inventory management and demand planning process. The training began in the form of pilots in selected states. Later, it was successfully rolled out nationally through a web-based training program that included more than 1,700 participants. The government used a comprehensive tracking system to ensure that training objectives were met in each state and performed according to a defined timeline. States were grouped according to their impact on national service levels. For example, because it is more difficult to achieve high service levels in states with larger populations, training was monitored more closely in these states.

Of course, no improvement initiative will succeed without willing participants. Leading governments use relevant incentives to gain buy-in from all stakeholders. The public health sector in Mexico, for example, relied on non-monetary incentives such as recognition awards to commend individual achievements. One government newsletter published an interview with a web-training coordinator who had successfully trained a group of employees to use Web resources.

Finally, feedback is essential to determine what works and what doesn't. For example, feedback from people without internet access spurred the production and distribution of training CDs as an alternative to web-based training in Mexico.

Conclusion

As public health care programs struggle to supply medicine to the populations they serve, they can borrow a few pages from countries that are successfully reforming their drug supply processes. Organizations that focus on the key elements of improving drug supply and adopt a disciplined and structured implementation process are positioned for success. The dual requirements of making critical drugs available and affordable are tough to meet. But public health care organizations that rise to the challenge will find the effort worthwhile. Now more than ever, medicines are a critical factor in ensuring the public's welfare.

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