

Zambia

Implications of Health Sector Reform for Contraceptive Logistics

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FPLM

The Family Planning Logistics Management (FPLM) project is funded by the Office of Population of the Bureau for Global Programs, Field Support and Research of the U.S. Agency for International Development (USAID). The agency's Contraceptives and Logistics Management Division provides a centralized system for contraceptive procurement, maintains a database on commodity assistance, and supports a program for contraceptive logistics management.

Implemented by John Snow, Inc. (JSI) (contract no. CCP-C-00-95-00028-00), and subcontractors (The Futures Group International and the Program for Appropriate Technology in Health [PATH]), the FPLM project works to ensure the continuous supply of high-quality health and family planning products in developing countries. FPLM also provides technical management and analysis of two USAID databases, the contraceptive procurement and shipping database (NEWVERN); and the Population, Health, and Nutrition Projects Database (PPD).

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Recommended Citation

Bates, James, and Sandhya Rao. 2000. *Zambia: Implications of Health Sector Reform for Contraceptive Logistics*. Arlington, Va: Family Planning Logistics Management (FPLM)/John Snow, Inc. (JSI), for the U.S. Agency for International Development (USAID).

Abstract

This report on the effects of health sector reform (HSR) on contraceptive logistics is part of a four-country comparative study. Its purpose is to describe the elements of Zambia's HSR program and relate them to specific developments in contraceptive logistics.

The report reveals that although product availability at service delivery points improved over the span of HSR, the most likely reason was continuity of bilateral funding for contraceptive supplies and technical assistance aimed directly at the contraceptive logistics system. HSR's effects on contraceptive logistics were mixed in that it improved some operations, such as central storage and distribution, but caused deterioration in others, such as logistics management information systems. HSR-sponsored training activities were ineffective in transferring logistics skills to district and service delivery point staff.

The report's sections include discussions of (1) background and study methods, (2) HSR in Zambia, (3) operation of public sector logistics, (4) developments in contraceptive and drug logistics, and (5) findings and recommendations. Donor and country-based decision makers can use this report to identify lessons learned in the design and implementation of HSR programs. Researchers can use it as a reference for methods used to investigate logistics operations.



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Acronyms

CBOH	Central Board of Health
CCLU	Contraceptive Commodities Logistics Unit
CIDA	Canadian International Development Agency
CLM	Contraceptive and Logistics Management
CMAZ	Churches Medical Association of Zambia
CPR	contraceptive prevalence rate
CSP	Contraceptive Supply Project
DANIDA	Danish International Development Agency
DFID	British Department for International Development
DGIS	Netherlands Ministry for Development Cooperation
DHMT	District Health Management Team
DHS	Demographic and Health Survey
DPS	Department of Pharmaceutical Services
ED	essential drug
EDL	essential drug list
EHCP	essential health care package (Zambian equivalent of the acronym ESP)
ESP	essential services package
FAMS	Financial and Administrative Management System
FH	family health
FHU	Family Health Unit
FPLM	Family Planning Logistics Management (Project)
GMR	Contractor managing Medical Stores Limited
GRZ	Government of the Republic of Zambia
HIF	health investment fund
HMIS	health management information system
HSR	health sector reform
ICPD	International Conference on Population and Development
IMCI	integrated management of childhood illness
IUD	intrauterine device
JICA	Japan International Cooperation Agency
LMIS	logistics management information system
LMU	logistics management unit
MCH/FPU	Maternal and Child Health/Family Planning Unit
MOH	Ministry of Health
MMD	Movement for Multiparty Democracy
MPU	MOH Procurement Unit
MSL	Medical Stores Limited
MWRA	married women of reproductive age
PCHSD	Public and Clinical Health Systems Division
PHO	Provincial Health Office
PHP	public health practitioner
RH	reproductive health
RHD	Regional Health Directorate
RHO	Regional Health Office
SDP	service delivery point
SIDA	Swedish International Development Agency
SSD	Service Support Division

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TFR	total fertility rate
UCI	universal child immunization
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
USAID	U.S. Agency for International Development
VFT	vaginal foaming tablet
ZCCM	Zambia Consolidated Copper Mines
ZNTB	Zambia National Tender Board

Acknowledgments

We could not have completed this study without the assistance of many parties. First on the list are the staff of the Central Board of Health and the regions, districts, and service delivery points where the study team collected data. In addition, staff members of the USAID mission in Zambia and the USAID Center for Population, Health and Nutrition's Division of Contraceptives and Logistics Management also made important contributions. Finally, the team members wish to express their gratitude for the guidance and assistance of their Zambian teammates; without assistance their assistance we would have accomplished much less.

Executive Summary

This report summarizes the findings of a country study conducted in July and August 1999 on the implications of health sector reform (HSR) for contraceptive logistics in Zambia. The study was conducted by the Family Planning Logistics Management (FPLM) project managed by John Snow, Inc., in conjunction with the Central Board of Health of Zambia (CBOH). It is the first in a series of country studies, including Ghana, Kenya, and Tanzania, sponsored by the Contraceptive and Logistics Management (CLM) Division within the Center for Population, Health and Nutrition of the U.S. Agency for International Development (USAID). Following the completion of all the studies, a synthesis document was prepared summarizing lessons learned in the four countries.

Rationale

As the need for contraceptives continues to rise, HSR programs portend dramatic changes for the logistics systems that manage them. This series of country studies is being conducted to:

- understand how HSR programs affect contraceptive logistics,
- disseminate lessons learned to countries and donors, and
- avoid mistakes that could adversely affect product availability in the future.

For each country study, there are two interrelated objectives:

1. To document contraceptive logistics operations in environments where HSR programs are being implemented.
2. To identify changes in logistics functions that may have taken place, document their consequences, and clarify associations, if any, between the changes and HSR.

Background

During the 1990s, in an environment of rising contraceptive needs and costs, many donor-reliant countries began implementing HSR programs, supported by a consortia of development banks, multilateral agencies, and bilateral donors. These programs aim to improve the quality, efficiency, and financial sustainability of health services, often through the development of an essential services package (ESP). To promote maximum coverage of ESPs, HSR programs also include innovations in management and financing. Implementation of these changes has traditionally focused on the district and subdistrict levels.

Reform-sponsored measures, such as integration of logistics services or decentralization of decision making, are likely to affect the functioning of vertical logistics systems. Systems often are purposefully changed or redeveloped to improve operational efficiency. In many countries, donors providing contraceptives have made significant efforts to develop logistics systems to support their donated commodities. As a result, these logistics systems may be more effective at ensuring product availability for contraceptives than for other supply categories.

Health Sector Reform in Zambia

In 1991, the Movement for Multiparty Democracy (MMD) put forth the basic principle of HSR in Zambia: “cost effective, quality health care as close to the family as possible.” HSR was launched under this basic tenet and other important principles such as visionary leadership, accountability to consumers, and partnerships with communities.

Systematic efforts to improve contraceptive logistics in Zambia coincided with the development and implementation of the HSR program. The Government of the Republic of Zambia (GRZ) announced its intentions in 1991. From 1993 to 1997 there was intense activity in HSR, including restructuring, decentralization, systems development and capacity building, development of the ESP, and development of the reproductive health and family planning strategy following the International Conference on Population and Development (ICPD).

Study Design

The study was primarily qualitative with a small, purposively selected sample. Principal criteria for selecting district samples included perceived degree of penetration of HSR activities and geographic access. Three regions, five districts, and 15 service delivery points (SDP) were visited by the Zambia data collection teams during the study.

Interview guidelines were used at the regional levels while standardized questionnaires were used both at district and SDP levels. The questionnaires were pilot tested in Lusaka district prior to the commencement of data collection in the field. In addition to these questionnaires, the study team completed a comprehensive literature review prior to in-country activities; an in-country document review of policies, work plans, studies, and consultancy reports; in-depth interviews with host country and donor staff; and a review of all logistics-related records.

Implications of Health Sector Reform

Decentralization

Although general reaction to decentralization has been favorable, the majority of study respondents stated that resource allocation to the districts has been consistently insufficient, resulting in partial or incomplete implementation of well-planned budgets and work plans.

Capacity Building

While respondents spoke positively about activities to build capacity, mentioning the various training activities that had prepared them for decentralized management, quantitative data show little improvement in stock monitoring, quantification, and supervision. Contraceptives were found to be given less emphasis than drugs with regard to proper storage conditions, reflecting the inadequate attention given to contraceptives during such activities.

Management Information Systems

The Health Management Information System (HMIS) and the Financial and Administrative Management System (FAMS) are tools that enable managers at both the central and district levels to base their decisions on routine flows of public health and management information. While training on these systems

has been a prominent part of capacity building activities, these systems do not provide the information required (e.g., stock levels) for managers at higher levels to monitor logistics performance at lower levels.

Partnership between the Ministry of Health and Donors

The theme of partnership between the Ministry of Health (MOH) and Zambia's community of assistance agencies figures prominently in HSR program literature. Examples of the relationship between the MOH and its cooperating partners include biannual meetings and the district basket fund.

This study compares the results when two different approaches are used to procure essential commodities (i.e., drugs and contraceptives). In the case of Zambia, drug financing appears to be vulnerable to disruptions not experienced for contraceptives.

Recommendations

Based on study findings, recommendations include:

1. The CBOH should formulate a distinct "Logistics Services Improvement Plan" that would develop reasonable resolutions to constraints identified by this study.
2. The HMIS requisition form should be redesigned to include columns for missing information, such as commodity consumption and balances. With this improvement, staff at higher levels will automatically receive the information needed to monitor system performance.
3. District staff should be provided with on-the-job training in stores management and quantification. They should, in turn, supervise SDP staff to identify problems, correct deficiencies, and train staff to improve stores management and record keeping.
4. Family planning service providers should receive training in the appropriate use of and counseling for all products included in the method mix.
5. The CBOH should validate the drug financing estimates resulting from this study, as they suggest a trend of diminishing drug supply at the district level. If this is true, major components of HSR, such as the essential services package and decentralization, could be seriously compromised.

1. Background

A series of country studies analyzing the implications of health sector reform (HSR) for contraceptive logistics has been completed at the request of the Contraceptives and Logistics Management (CLM) Division of the U.S. Agency for International Development's (USAID) Center for Population, Health and Nutrition within the Global Bureau. The Family Planning Logistics Management (FPLM) project managed by John Snow, Inc., conducted the studies with Ministry of Health (MOH) staff in Ghana, Kenya, Tanzania, and Zambia. The studies for Zambia and Ghana were larger-scale efforts to examine the consequences of HSR on all functions of contraceptive logistics processes. The other two studies were smaller-scale efforts that focused more narrowly on HSR's impact on some, but not all, logistics functions. The Zambia and Ghana studies were conducted by study teams working in-country with formal study protocols over a six-week period. In Kenya, time and money constraints limited data collection to the central level. Tanzania has been included in the sample, not as a purpose-built study, but as a target of opportunity that presented itself when two study team members visited that country for a contraceptive logistics technical assistance assignment.

Upon the completion of all country studies, FPLM prepared a paper synthesizing the results. The audiences for both the country studies and the synthesis paper are country decision makers, assistance agency decision makers, and individuals providing technical assistance.

Rationale

Rising Need for Contraceptives

In 2000, it is estimated that there are 134 million contraceptive users in developing countries (Ross and Bulatao 2000). As interest in contraceptive use increases and a large cohort of men and women enter their reproductive years, the need for contraceptives will continue to grow. Projection in a report prepared for the FPLM Project by the Futures Group International indicate that by 2015 the number of contraceptive users will increase 89 percent (119 million added users) to 253 million.

Over the past several years, contraceptive donors, private foundations, public sector service delivery programs, NGOs, and in-country providers have become increasingly concerned about the status of global contraceptive supplies. These observers have reported shortfalls of contraceptives throughout the developing world and indicated that the funding gaps for contraceptive purchases will exceed U.S.\$100 million by 2015 (Ross and Bulatao 2000).

Implications of Health Sector Reform

During the 1990s, with rising contraceptive needs and costs, many donor-reliant countries have implemented HSR programs, supported by consortia of development banks, multilateral agencies, and bilateral donors. The World Bank's *World Development Report 1993: Investing in Health* was an important stimulus for this trend. The document explains the basic rationales for reforms, describes their major components, and provides a common language. HSR programs aim to improve the quality, efficiency, equity, and financial sustainability of health services. The cornerstone of most programs, development of an essential services package (ESP), is driven by the need for cost-effective use of limited resources. ESPs typically include interventions such as family planning, prenatal and delivery care, management of the sick child, treatment of tuberculosis, and case management of sexually transmitted diseases. HSR

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programs based on these principles have gone forward in many countries without strong evidence of the effectiveness of the ESP approach.

To promote maximum coverage of the ESP, HSR programs also include innovations in management and financing, including—

- integration of health and family planning services,
- integration of logistics and other support services,
- decentralization of planning and budgetary decision making,
- implementation of cost recovery measures, and
- privatization of selected operations.

Implementation of these changes usually focuses on district and subdistrict levels. For good results, hospitals and health centers must have a number of resources continually available, including contraceptives, drugs, vaccines, expendable medical supplies, and trained staff. In the past, program-specific supply items have been forecasted, procured, stored, and transported through vertically managed, single-purpose logistics systems and, in many countries, they still are. Examples include contraceptives, oral rehydration salts, co-trimoxazole, tuberculosis and leprosy drugs, and vitamin A and other nutritional supplements.

Reform-sponsored measures, such as the integration of services or decentralization of decision making, are likely to affect the functioning of the vertical logistics systems. Indeed, managers often purposefully change the systems hoping to improve operational efficiency to better support the essential services packages. In many countries, donors providing contraceptives have made significant efforts to develop logistics systems for this important supply category. As a result, systems for contraceptives are often more effective at ensuring product availability at service delivery points (SDP) than is the case for other supply categories. FPLM has 15 years' experience working with contraceptive logistics in 40 developing countries. This experience suggests that countries implementing HSR programs typically have stronger systems for contraceptives, weaker systems for drugs, and systems for vaccines that fall somewhere in between.

During the 1990s, the need for contraceptives continued to rise, while, simultaneously, HSR programs portended dramatic changes for logistics systems. The rationale for carrying out the series of country studies and preparing the synthesis paper is to—

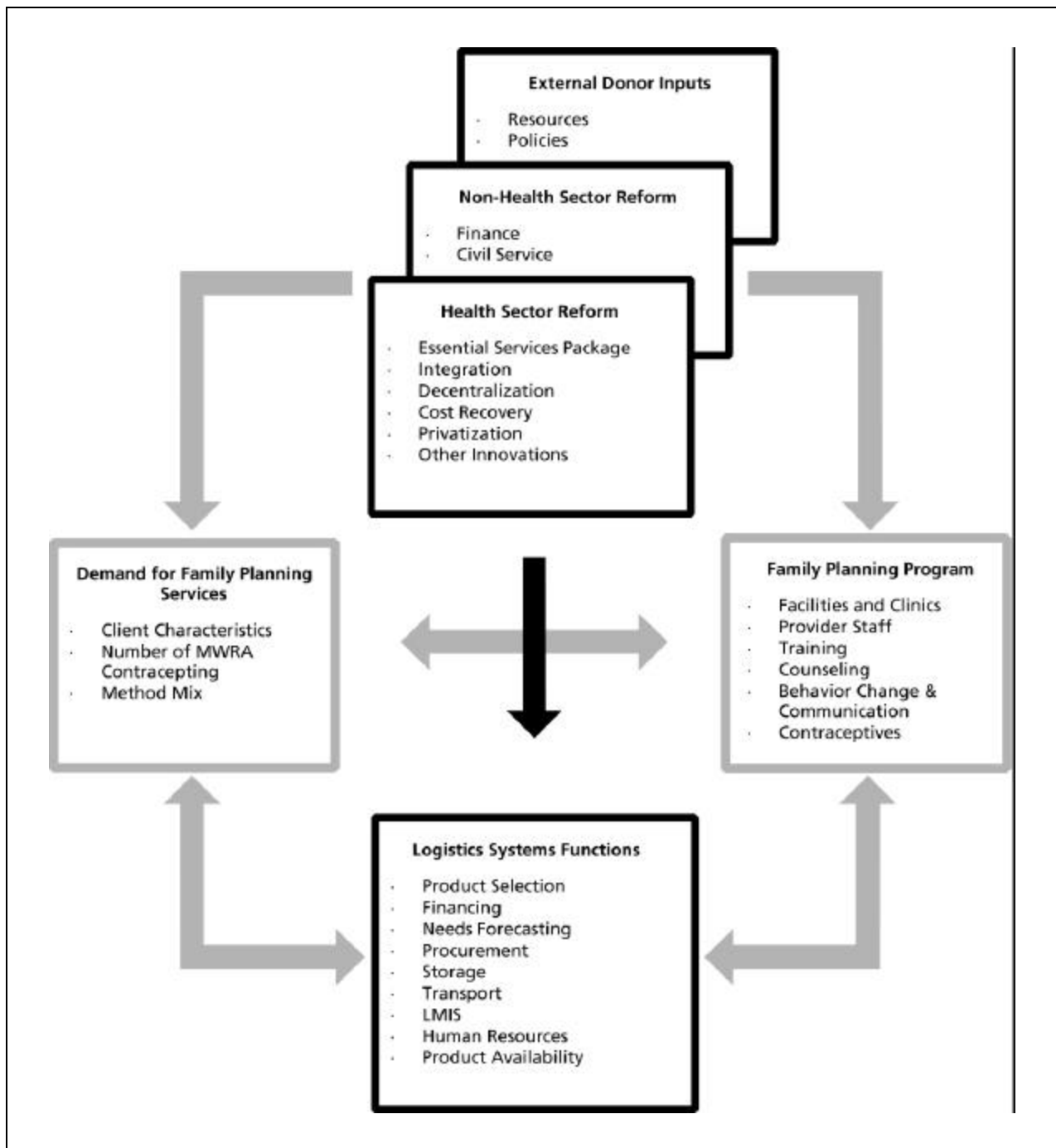
- understand how HSR programs affect contraceptive logistics,
- disseminate lessons learned so concerned countries and donors could benefit from positive developments, and
- avoid mistakes that would adversely affect product availability.

Although contraceptives are the main focus, the results from the studies also help explain how HSR may be affecting logistics management for other priority public health commodities.

Conceptual Framework

Figure 1 shows the relationship between elements for change and logistics systems in countries where HSR is taking place. Developments associated with these elements of change can affect the ways in which individual logistics functions are carried out and results achieved.

Figure 1.
Relationship between Elements for Change and Logistics Systems



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When used to guide information gathering, this model can explain how specific logistics functions and, ultimately, contraceptive security are affected by the important environmental changes taking place.

- At the top are the three interrelated elements of health sector reforms, non-health sector reforms, and external donor inputs. At the bottom are logistics system functions, including product selection, financing, needs forecasting, procurement, storage, transport, logistics management information systems (LMIS), human resources, and product availability. Possible changes in these functions associated with HSR are the main axis of inquiry.
- To the left and right are demand for family planning services and the family planning program itself. Changes in these elements, whether brought about by HSR or other factors, also have the potential to affect the way in which logistics functions are carried out.

At the outset, it is possible to envision two basic types of effects of HSR:

- *Direct effects* that deliberately cause logistics functions to be performed differently. Examples include changing the contraceptive method mix, reorganizing the central medical store, or implementing a new management information system.
- *Indirect effects* that are induced elsewhere in the environment, but affect how specific logistics functions are carried out. Examples include changing relationships between host country ministries and donors, integrating family planning and reproductive health services, or training for family planning service providers that creates prescriber or client preferences for certain products.

Study Team, Objectives, and Methods

This section presents the general protocol for study methods used in Zambia and Ghana. More details concerning Zambia are found in section 5.

Study Team

A team of FPLM staff and consultants from John Snow, Inc., and specialists from The Futures Group International, a subcontractor for FPLM, implemented the country studies. Local professionals were recruited in each country and the team worked closely with CLM Division staff.

Objectives

For each country study, there are two interrelated objectives:

1. To document contraceptive logistics operations in environments where HSR programs are being implemented.
2. To identify changes in logistics functions that may have taken place, document their consequences, and clarify associations, if any, between the changes and HSR.

Individualized country reports will be sent to host country program managers so they can use the findings.

Methods

In each country visited, study team members gathered both qualitative and quantitative information using three methods:

1. Review relevant documents, such as policy statements, work plans, studies, and consultancy reports.
2. Interview key informants among host country and donor staff.
3. Review logistics-related records.

To guide information gathering, the study team developed generic questionnaires that were subsequently adapted for each country. Using these tools as a guide, team members gathered information at the central, regional, district, and SDP levels. Work at the district and SDP levels required a sample survey approach. The questionnaires developed for Zambia appear in appendix A.

2. Country Situation

Political and Economic Environment

The Government of the Republic of Zambia's (GRZ) decision to embark on a health sector reform program, and the subsequent sequence of events, has stimulated numerous studies by parties interested in assessing the progress of a major purpose-built HSR program. One consequence is the availability of many thoughtful presentations of the political and economic environment in which Zambia's reforms have taken place. The following summary is quoted directly from a case study prepared for the World Bank (McLaughlin 1999).

Zambia, a landlocked African country with a population of 9.4 million, with 43 percent residing in towns or cities, is the most urban sub-Saharan African country outside South Africa. The gross national product per capita of U.S.\$370 places it among the world's poorest nations; 86 percent of the population are estimated to live below the poverty line. The infant mortality rate is 109 (Demographic and Health Survey [DHS] 1996), and life expectancy is only 46 years. Approximately 50 percent of the population is below the age of 15. These last three statistics demonstrate the outcomes of a high HIV prevalence (up to one in four adults is estimated to be HIV positive).

The health system is dominated by the public sector. The government accounts for as much as 75 percent of total health expenditures and 73 percent of service provision. Other than the MOH, the key provider in the public sector is the Zambia Consolidated Copper Mines (ZCCM)—although the future of these services is uncertain because of the current privatization of the mines. The major nongovernmental provider of care is the Churches Medical Association of Zambia (CMAZ), whose operations are heavily dependent on public financing.

Between 1970 and 1990, the nation's economic situation deteriorated, and financing for the health sector decreased dramatically. Exacerbating the problem, allocations to the social sectors were not prioritized; by 1990, the proportion of the national budget allocated to the health sector was reduced to 4 percent. Since 1991, to support the health reforms program and Zambia's structural adjustment strategy, the percentage of the government budget allocated to the health sector has increased significantly to between 12 percent and 14 percent. In 1996, MOH expenditures were estimated at U.S.\$7 per capita. Unfortunately, the growth in GDP is unlikely to exceed the population growth rate of 3.1 percent, and the generous allocation to the sector will translate into a decline, in real terms. This economic reality has strongly influenced the acceptance of a more explicit approach to allocating limited resources, together with increased efforts to generate additional resources for health.

With the first multiparty elections in 1991, following 30 years of an economy-based, socialist-style planning and administration, the Movement for Multiparty Democracy (MMD) came to power on a platform of change. Its stated commitment from the outset was to reform the health system. Widespread concern about the lack of care and visibly deteriorating facilities, combined with the new economic and political environment, led to the comprehensive reforms program.

Health Sector Reform Program

The concept of “health sector reform” is commonly thought of as essential services packages, financial reforms, and/or decentralization of management. Equally important, however, are systems development and capacity-building activities, such as designing health management information systems or training staff in logistics skills. While activities like these are often carried out in non-reform environments, once a definable HSR program is launched, it tends to be regarded as an integral part of the reform effort. This is certainly true in Zambia, and, consequently, many separate measures make up HSR in this country.

As with the political and economic context, the content of Zambia’s HSR program is also discussed in numerous documents. Discussions in this part of the paper are adapted, with little change, from work carried out by others. Dr. Sara Bennett’s workshop presentation, “Health Reforms in Zambia: Putting Them in Perspective,” (Bennett 1998), provided information for the sections in this paper titled, “Underlying Principles,” “Restructuring,” and “Financing.” The treatment of the section, “Systems Development and Capacity Building,” is developed, in part, from Dr. Bennett’s presentation and, in part, from Ms. Rachel Feilden and Dr. Ole Frank Nielson’s study, *Immunization and Health Reform: Making Reforms Work for Immunization* (1998). The treatment of “Stakeholders, Process, and Timing” is also adapted from the Feilden and Nielson study. Dr. Thomas Bossert’s report, *Decentralization of Health Systems: Preliminary Review of Four Country Cases*, also provided much useful information (1999).

Underlying Principles

In 1991, the MMD put forth as the basic principle of HSR in Zambia, “cost effective, quality health care as close to the family as possible.” The MMD also identified three other important principles:

- *Leadership* or the intention that the MOH should provide visionary political leadership instead of being involved in all aspects of service delivery. Transfer of important management responsibilities to a Central Board of Health and semi-autonomous hospital and district boards also encouraged leadership at operational levels.
- *Accountability* or the intention of making providers more accountable to consumers through decentralization and establishment of local boards that would represent community interests.
- *Partnership* or building reciprocal relations with consumers through the introduction of token user fees and establishment of local boards that would advocate consumer interests. The idea of partnership also extended to donors and NGOs, with the intention of creating a more inclusive reform process.

Restructuring

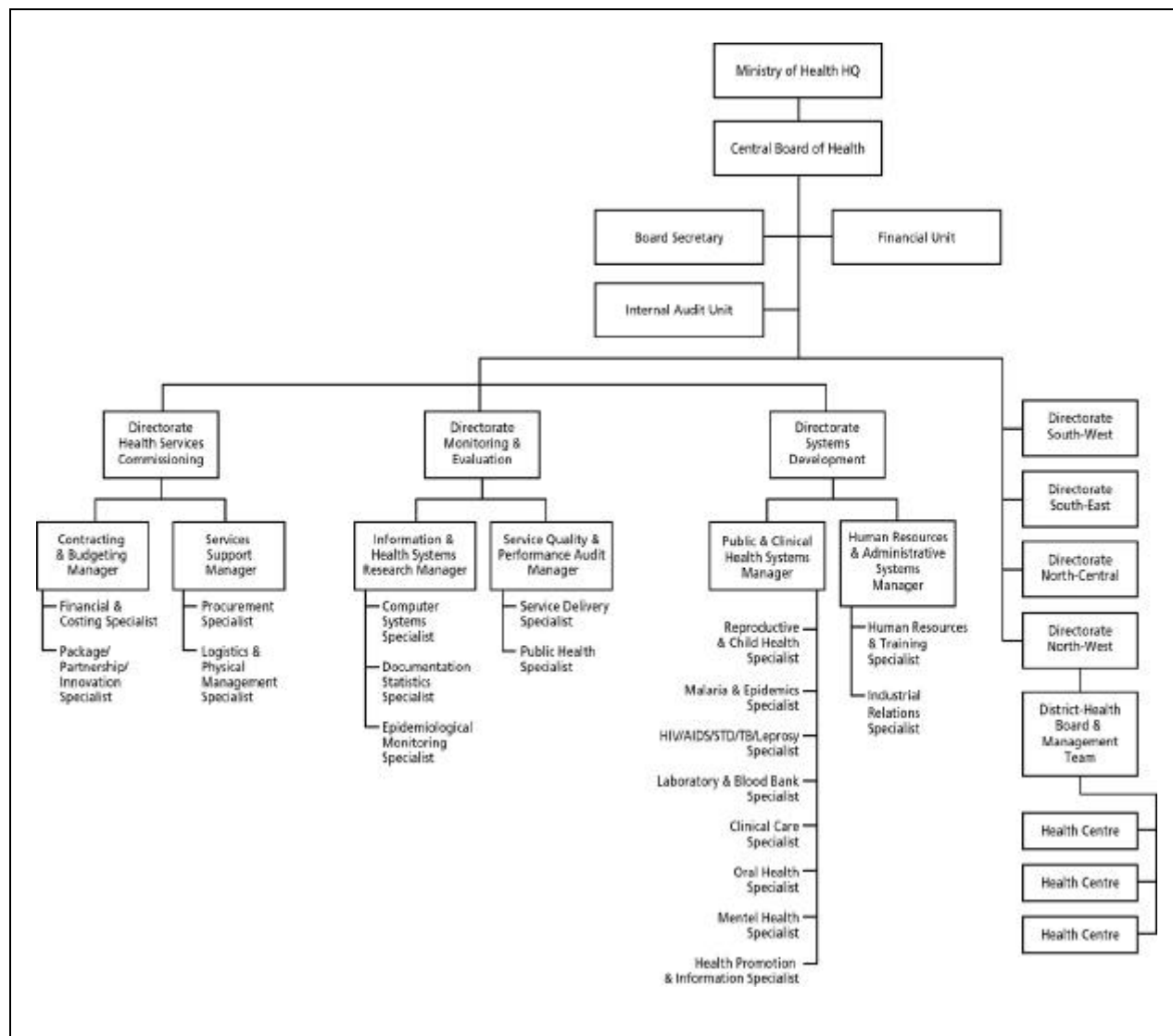
Restructuring of the health care system has been the most visible component of HSR in Zambia. Important organizational changes include—

- *Division of the MOH’s functions:* The MOH now handles policy making, priority setting, and negotiating financing with the government, while the newly created CBOH manages the day-to-day operations of the health services delivery system.
- *Dissolution of the vertical health services programs:* Most technical responsibilities for the central-level functions were transferred to the Public and Clinical Health Systems Division (PCHSD) within the CBOH.

- *Creation of four Regional Health Directorates (RHD):* They replace nine Provincial Health Offices (PHO) to oversee operations in the 72 health districts.
- *Constitution of semi-autonomous boards:* Composed of health officers and community members, the District Health Boards oversee the District Health Management Teams (DHMT)—that is, the staff within the District Health Offices who are responsible for ensuring the provision of health and administrative support services at the district hospitals and health centers. Major hospitals also have boards with analogous responsibilities.
- *Decentralization:* Functionally defined as assignment of budgets to the districts based on approved work plans. Decentralization is often regarded as the single most important element of the reform program.
- *Creation of neighborhood health committees:* Planned to increase accountability and popular participation at the most local level.

Figure 2, an organogram, displays the organization of the health establishment based on these changes.

Figure 2.
Organogram of Reformed Health System—Zambia 1997



Feilden and Nielsen 1998

Financing

To provide resources for the restructured health care system, Zambia has made some important financing changes, including—

- Increased the government's total budget allocation for health from 5.7 percent in 1991 to 13.7 percent in 1997.
- Introduced a rational resource allocation formula for assigning resources to districts according to population size and degrees of remoteness, resulting in greater geographic equity.
- Established a district basket fund to channel government and donor funds to the district level for implementation of approved local plans, without program-specific earmarking.

- Introduced cost sharing through prepayment schemes and user fees.

Systems Development and Capacity Building

Within the context of the restructured health care delivery system, the reformers also implemented a broad range of measures to improve management efficiency and quality of care, including—

- *Developed district planning guidelines.* Provides DHMTs with the information required to produce the work plans on which their budgets are based.
- *Developed an essential health care package (EHCP) for primary health care.* Defines priorities in the clinical workplace and guides decisions about resource allocation.
- *Published “Guidelines for Front Line Health Workers.”* Provides information about carrying out the interventions defined in the ESP and stresses integration of services offered at SDPs.
- *Developed an “Integrated Strategy for Health and Family Planning.”* Describes an integrated approach for providing these services, along the lines of the 1994 International Conference on Population and Development (ICPD).
- *Developed new Health Management Information System (HMIS).* Facilitates data-based decision making, beginning at the SDP.
- *Developed a new Financial and Administrative Management System (FAMS).* Improves accountability of funds channeled to the district level.
- *Integrated most aspects of most vertical logistics systems into one system.* The exceptions include vaccine logistics with its specialized storage and distribution requirements, and contraceptive logistics with its donor-financed and donor-led procurement processes.

Capacity-building activities to orient and train staff at central, regional, district, and SDP levels on the operation of new or modified guidelines and systems were paired with these measures and, in some cases, preceded decentralization of budgeting or funds management. Those most relevant to contraceptive logistics are discussed in detail in this report. Because the various training activities have been so pervasive and frequent, capacity building, with decentralization, has been one of the most visible elements of HSR in Zambia.

Stakeholders, Process, and Timing

A thorough exploration of the key individuals, content, interrelationships, and sequence of events for HSR in Zambia is too lengthy to include in this study. Nevertheless, an overview of the most important stakeholders is essential, as is a summary of the most important events driving the reform process, and the timing of the whole complex of HSR measures. This overview is intended to place specific developments for contraceptive logistics in a useful context.

Stakeholders

Stakeholders in Zambia’s HSR program are numerous. The MMD, the first stakeholder, made improved health services, achieved through reforming the old system, an explicit political objective of the new government. In many ways, the most important body of stakeholders is within both the old and new health establishment, including staff at the central MOH, newly formed CBOH and RHDs, and from the

old technical programs and PHOs. As the intended beneficiaries of the reforms, the Zambian population is also a stakeholder. This is evident in the establishment of new management and advisory bodies at local levels, such as neighborhood health committees, and district and hospital boards. The donors and NGOs, often referred to as “cooperating partners” in HSR program documents, are another group of important stakeholders.

Process

Immediately after coming to power in 1991, the MMD signaled its intention to reform the health sector by putting forth the basic principle. In 1995, parliament approved the New Health Act, which is the legal basis for the reforms. Though work on decentralization began earlier—for example, training of district staff by a health reform team began in 1993—it was following the New Health Act that districts began receiving grants to manage locally. This has been the most important milestone in the reform process to date. Reform of the district health system drove the rest of the program. Another important event was the appointment of Dr. Katele Kalumba as Minister of Health in 1996. As a leading proponent of reforms before taking office and during his tenure, Dr. Kalumba increased both the scope and the pace of HSR.

Critical to the reform process was the decision by the MOH and donors to support the program by placing funds in a “basket” or pool for financing district health plans under a common management arrangement. Donors contributing to the basket include the Danish International Development Agency (DANIDA), Netherlands Ministry for Development Cooperation (DGIS), IrishAid, Japan International Cooperation Agency (JICA), British Department for International Development (DFID), Swedish International Development Agency (SIDA), United Nations Children’s Fund (UNICEF), USAID, and the World Bank. These agencies meet quarterly with the CBOH to review management of basket funding and participate twice yearly in work planning and performance review meetings. The April meetings review performance and approve the rolling five-year plan. The November meetings approve the following year’s plans and pledge a contribution to the basket.

The cooperating partners, MOH, and donors agreed to a common management arrangement for handling basket funds. The partners also designed and implemented procedures and formats for planning, managing, accounting, and reporting. Major capacity-building exercises were completed between 1992 and 1997 for quality assurance, management, and administrative skills in the Hospital and District Health Management Boards. In 1992, three pilot districts prepared their plans; by 1997, all but the newest districts were preparing plans.

Through basket funding, the district health plans are financed by the MOH with additional support from the donors. Until January 1998, funds were disbursed by MOH to the districts and hospitals. As of that date, the CBOH took responsibility for the financial disbursements.

Between 1995 and 1998, an important related development was the shift of the relative contributions to total funding for health by the GRZ and the donors. In 1995, the GRZ provided 67 percent and the partners provided 33 percent. By 1998, the ratio was reversed—partners were providing 62 percent and the GRZ was providing 38 percent. This included all activities, not just the district basket. As the reforms expanded, reliance on partner funding increased (Daura and Mulikelela 1998).

For the staff, the MOH intended to implement delinkage of employment. That is, most staff would no longer be employed by the MOH but would be recruited, selected, and employed by various boards: for CBOH and the Regional Health Offices (RHO), this meant the CBOH; for districts and hospitals, their respective local boards. This decision caused widespread and well-publicized anxiety and uncertainty among those in post and, not surprising, had major political ramifications. The MOH postponed the decision several times and, in April 1998, postponed it indefinitely.

In April 1998, there was a change in health ministers. Since then, it is obvious that the MOH is reconsidering both the content and pace of the reforms. In addition to postponing delinkage, the MOH has recently slowed down, though not eliminated, capacity-building activities; disbanded the RHDs and re-established the PHOs; and disbanded some hospital and district boards. In February 2000, yet another new minister took charge, one who is generally considered to be more positive about the Health Reform Program. The effects of this development are not yet known.

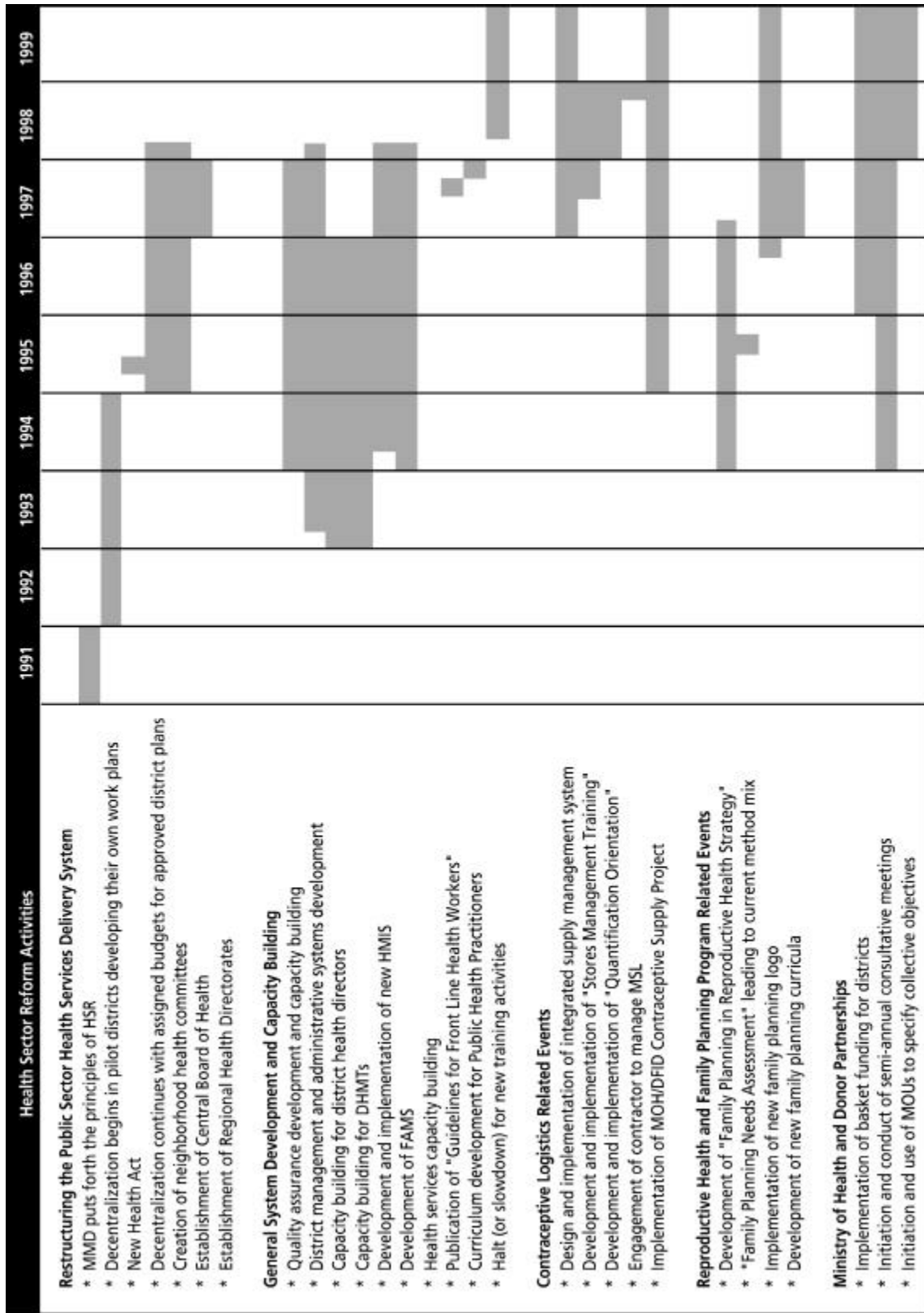
Although it is difficult to obtain details and various accounts conflict, some donors, based on objections to specific developments, are reported to have withheld funds from the basket funding arrangement. It appears, however, that the mechanism itself and the quarterly meetings are still in place. Among key informants in Zambia, some speculate that the reforms are being dismantled, while others describe the developments since 1998 as a pause in a long-term process.

Timing

Figure 3, a gantt chart, shows the approximate timing of the measures most relevant to this study. It shows that the period from 1993 through 1997 was one of significant activity for restructuring and design and implementation of new systems. For much of the program, the intensity of activity appears to fall off after 1997. For logistics, however, some important activities continue through 1998 and beyond.

Despite the apparent density of activity between 1993 and 1997, it would be a mistake to speak of HSR in Zambia in “before and after” terms. Some activities have antecedents that go back to the immediate post-independence period. Even when design and implementation of some activities come to an end or pause, the effects carry into the future.

Figure 3.
Approximate Timing of Measures

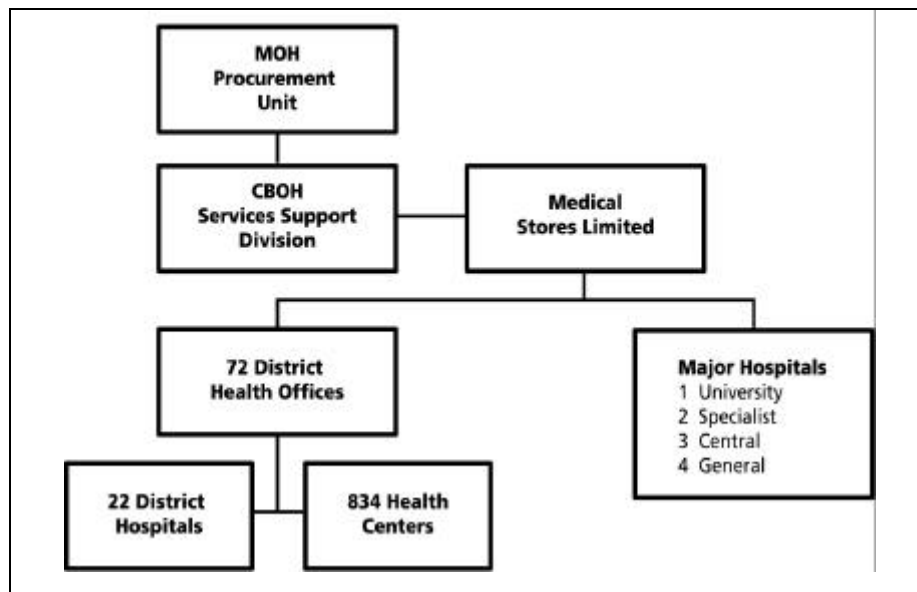


3. Overview of Logistics System

Structure and Functions

The structure of the MOH logistics system is relatively simple. As shown in figure 4, there are essentially three levels: central, district, and SDP.

Figure 4.
Structure of MOH Logistics System



Following is a summary of logistics functions:

Product selection for contraceptives is embodied in the family planning and reproductive health strategy that the MOH adopted in 1997 (MOH/Zambia 1997a). The method mix consists of 10 products. For drugs, the key document is the essential drug list (EDL). The Minister of Health has final approval of contraceptives and drugs to be used at SDPs; technical committees advise the minister. The practical work leading up to decisions for adding or deleting items from the official lists is coordinated by relevant offices within the CBOH, such as the Public and Clinical Health Systems (PCHS) Division and Services Support Division (SSD). All contraceptives distributed through the public sector are found on the EDL by generic name. However, despite the prominence of the EHCP in the HSR program, some products, such as tuberculosis drugs and vitamin A, were not on the EDL as late as 1988. One analyst attributes this to the pre-HSR verticalization of health services, when essential drugs was one of the vertical programs (Nanda 1999).

Financing for contraceptives is 100 percent by donors, with DFID by far the most important provider through the bilateral Contraceptive Supply Project (CSP). USAID also plays a prominent role. Drugs are financed through various sources, including GRZ, through regular and special budget allocations; World Bank credits; and bilateral donors, such as SIDA, DGIS, and the Canadian International Development Agency (CIDA).

Zambia: Review and Lessons Learned

Needs forecasting for contraceptives is carried out by the Contraceptive Commodities Logistics Unit (CCLU) placed within the SSD of the Directorate of Health Services Commissioning at CBOH. Significant technical assistance for this function has been provided through the CSP. For drugs, the SSD does the forecasting; the manager is a pharmacist. The SSD has received substantial technical assistance for management of both contraceptives and essential drugs from both DFID and USAID. Previously, SIDA had provided technical assistance for essential drugs management to SSD's predecessor, the Department of Pharmaceutical Services (DPS).

Procurement of contraceptives, including the selection of suppliers, the contract, and the payment, is done by the donors that provide them. DFID relies on Crown Agents to perform this function, based on information provided by the CCLU. USAID has its own system, based on contracts with major suppliers and a freight forwarder who coordinates shipping worldwide. For drugs, there are a number of arrangements:

- *GRZ funds*: The MOH manages all aspects of procurement.
- *World Bank credits*: The MOH manages order quantity determination and supplier selection, with the World Bank providing "no objection" certification for release of funds.
- *SIDA and DGIS*: The MOH manages order quantity determination and supplier selection, with the two donors providing "no objection" certification for release of funds.
- *CIDA*: The MOH manages order quantity determination, and donor procures and transports product to Zambia.

Storage and transport has Medical Stores Limited (MSL) as the apex of the physical distribution system. All contraceptives and drugs enter the system through this facility. National and regional hospitals and districts have storage facilities, though these are often modest. For districts, storage space may be at the district hospital. Health centers have storerooms in some cases and only cabinets in others.

MSL ships almost all contraceptives in bulk. Drugs for hospitals or certain programs go out in bulk, and most drugs for health centers go out in kits. The kits contain condoms but no other contraceptives. In principle, MSL delivers directly to major hospitals and districts monthly, and districts, in turn, deliver to health centers monthly. In practice, hospitals and districts supplement MSL's deliveries by sending their vehicles to MSL, when needed. Health centers also supplement district deliveries with interim visits to the district storage facility, but the only vehicles the health centers have are bicycles and, occasionally, motorcycles. In principle, both contraceptive and drug deliveries among all levels are based on "pull" mechanisms, with order quantities determined at subordinate facilities. Interviews with system participants, however, suggest that, in practice, "push" situations are more common, with delivery quantities determined at higher levels.

A *Logistics Management Information System (LMIS)* exists, but does not provide much useful information. Data for planned procurements, balances, and issues are available at the central level for contraceptives and drugs. For the large hospitals and districts, data for consumption and balances are fragmentary. The same is generally true for the district hospitals and health centers. Little information rises through the system, and what does is not sufficient to enable managers at higher levels to monitor system performance at lower levels.

Importance of the Logistics System

In Zambia, the MOH logistics system is the single most important channel for conveying essential health supplies from suppliers to the public. The system serves most of the country’s health facilities; distributes most contraceptives; and is probably the largest distributor of drugs. As shown in table 1, it provides contraceptives, drugs, vaccines, and essential medical supplies to 51 percent of Zambia’s 84 hospitals and 84 percent of the country’s 1,037 health centers.

Table 1. Number of Health Services Delivery Points

Type	Service Delivery Point			Total
	MOH	NGO and Mission	Private	
Hospitals	43	29	12	84
Health Centers	834	68	137	1,037
Total	877	97	149	1,121

Source: Helling-Borda et al. 1997

For contraceptives, the MOH system is overwhelmingly the most important distributor. Table 2 shows that in 1997 the MOH managed 69 percent, by volume, of all contraceptives in Zambia. Key informants said that the relative percentages of products shipped through various channels in 1999 were about the same as for 1997.

Table 2. Percentages by Volume of Total Contraceptive Supply Distributed through Different Channels

Public Sector		Private Sector	
MOH RH, FP, and ED Programs	PPAZ and Other NGOs	Commercial	Social Marketing
69%	10%	8%	13%
DFID, USAID, SIDA, and DGIS	USAID, IPPF, and CIDA		DFID and USAID

Source: Barraclough 1998

For drugs, the MOH’s distribution role is not as predominant as it is with contraceptives, but it is still important. A marketing survey carried out by Ndola-based Gamma Pharmaceuticals in 1996 concluded that the U.S.\$14.1 million in drugs that flowed through the MOH system that year was 29 percent by value of Zambia’s U.S.\$48.7 million pharmaceutical sector (Helling-Borda et al. 1997).

Table 3. Estimated Value of Zambia’s Pharmaceutical Sector in 1996

Sector	Value (millions in U.S.\$)	Percentage
MOH	14.1	29.0%
CMAZ	9.0	18.5%
ZCCM	9.0	18.5%
Commercial Sector	16.6	34.0%
Total	48.7	100%

Source: Helling-Borda et al. 1997

The MOH system’s role is probably much greater than Gamma’s data suggest. In Dr. Susan Foster’s 1991 paper, “Supply and Use of Essential Drugs in sub-Saharan Africa,” she points out that the brand names provided through the commercial sector are usually four to five times the price of generic equivalents purchased by the MOH (Foster 1991). For six African countries, she estimates the value of public sector goods, adjusted upward, permitting comparisons of drug volumes.

The figures in table 4 are derived by applying this method to the figures in table 3, based on conservative factors of two and three, and assuming that the MOH and CMAZ handle mostly generics, while ZCCM and the commercial sector handle mostly brand-name drugs. They suggest that, for the volume of drugs handled, the MOH logistics system is either as large as, or larger than, the commercial sector. The MOH may have accounted for as much as 44.5 percent, by volume, of drugs distributed in 1996, making it the largest component of the pharmaceutical sector for that year.

Table 4. Relative Importance of Zambian Drug Distribution Systems Based on Adjusted Values for the MOH and CMAZ

Adjustment*	MOH	CMAZ	ZCCM	Commercial
None	29.0%	18.5%	18.5%	34.0%
× 2	39.3%	25.1%	12.5%	23.1%
× 3	44.5%	28.5%	9.5%	17.5%

* Value of MOH and CMAZ generic drugs, first unadjusted, and then adjusted against ZCCM and commercial values by factors of 2 and 3.

Selected Trends

Between 1993 and 1997, Zambia’s HSR program was in its most intense period of activity. DFID’s CSP Completion Report presents results for two key indicators—product availability at SDPs and CPR—for 1992 and 1998 (Barraclough 1999b). This may be supplemented by DHS estimates for CPR for 1992 and 1996 (Central Statistical Office et al. 1997, Gaisie et al. 1993). This information is presented in table 5.

Table 5. Product Availability and Contraceptive Prevalence Rates

	1992	1996	1998
Product Availability	Only 30% of facilities with any product		70% of facilities with all products normally available at central level
Contraceptive Prevalence Rate Calculated from Issues Data	3%		19.5%
Contraceptive Prevalence Rate from DHS	8.9%	14.4%	

Source: Central Statistical Office, et al. 1997; Barraclough 1999b; Gaisie et al. 1993.

These indicators should be interpreted with caution. The product availability figures are based on surveys, but the completion report does not identify the survey used for the 1992 figures. The source of the 1998 figure is a “destination audit,” commissioned by DFID; it includes 15 percent of Zambia’s SDPs (Barraclough 1999b). The CPR figures are calculated from quantities of contraceptives issued from MSL and, therefore, are only indicative. The DHS reports the CPR for currently married women age 15–49 using any modern methods as 8.9 percent in 1992 and 14.4 percent in 1996, suggesting that a 19.5 percent estimate for 1998 based on issues data is plausible (Central Statistical Office et al. 1997, Gaisie et al. 1993). There is, however, a possible confounding factor. The team conducting DFID’s mid-term review of the CSP concluded that since contraceptive distribution functioned poorly in 1996, the rise in CPR has been to some degree independent of logistics system operations (Godfrey et al. 1998).

Whatever the limitations of the figures presented in the Completion Report, in 1998, it suggests that the MOH logistics system was reasonably effective at ensuring availability of some contraceptives at most SDPs. Data directly collected by the study team tend to corroborate this view. For the 22 sites visited, all had at least one product in stock. For this sample, which included 5 DHOs, 2 hospitals, and 15 health centers, the average was 4 products.

As shown in table 6, there is a general rise in both total and per capita expenditures for contraceptives from 1995 through 1998, and then a decline in 1999. These data are based on inputs from all known suppliers. The five-year period covered by this table coincides with the CSP. The 1999 drop in expenditures is associated with project completion and disbursement of the last batch of funds. (DFID staff stated that the agency is considering continued funding for contraceptives, but no decision was made as of August 1999.) Table 7 shows an increase of about 200 percent in the per capita values of contraceptives issued from MSL between 1995 and 1998.

Table 6. Estimated Expenditures for Contraceptives in Current U.S. Dollars

Expenditure	Year				
	1995	1996	1997	1998	1999
Total in millions	1.76	1.72	2.16	3.29	0.91
Per capita	0.18	0.18	0.21	0.32	0.09

Sources: Data collected from interviews with and documents by CBOH, DFID, and USAID.

Table 7. Value of Contraceptives Issued from MSL in Current U.S. Dollars

Value	Year			
	1995	1996	1997	1998
Total in millions	0.44	0.35	1.39	1.75
Per capita	0.05	0.04	0.14	0.17

Sources: Data collected from interviews with and documents by CBOH and CCLU

The study team also gathered data on essential drugs that are broadly comparable to data gathered for contraceptives. Table 8 shows estimated total and per capita expenditures. These figures include inputs from GRZ, the World Bank, and bilateral donor funds. Where expenditures for contraceptives tended to increase, there is no clear trend for total drug expenditures from 1995 through 1998 at the central level, though the apparent decline for 1999 should be noted.

Table 8. Estimated Total Expenditures for Drugs in Current U.S. Dollars

Expenditure	Year				
	1995	1996	1997	1998	1999*
Total in millions	9.09	15.63**	7.93	9.77	5.58
Per capita	0.93	1.66	0.82	0.97	0.53

Source: Data collected from interviews with and documents by CBOH

* Includes estimates for the entire year.

** Estimate for this year is higher than that used by Gamma Pharmaceuticals for its marketing study; see table 3.

It was not possible to compile data for the value of drugs issued from MSL as was done for contraceptives. Though the CCLU has developed a system for tracking contraceptives inputs and issues from MSL, no comparable system exists for essential drugs.

However, estimates for the value of drugs allocated for three of the five districts in the sample are shown in table 9 for 1996 through 1999. This required compiling estimates of the value of drugs in bulk and numbers of kits shipped from MSL, as well as drugs purchased locally from district budgets. The results display a consistent decline in per capita allocations for the three districts.

Table 9. Estimated Per Capita Value of Drugs Allocated for Sample Districts in Current U.S. Dollars

Sample District	Year			
	1996	1997	1998	1999*
Mongu	1.19	1.10	0.94	0.80
Kabompo	1.36	1.11	1.01	0.70
Solwezi	1.14	1.10	0.83	0.73

Source: Data collected from interviews with and documents by CBOH

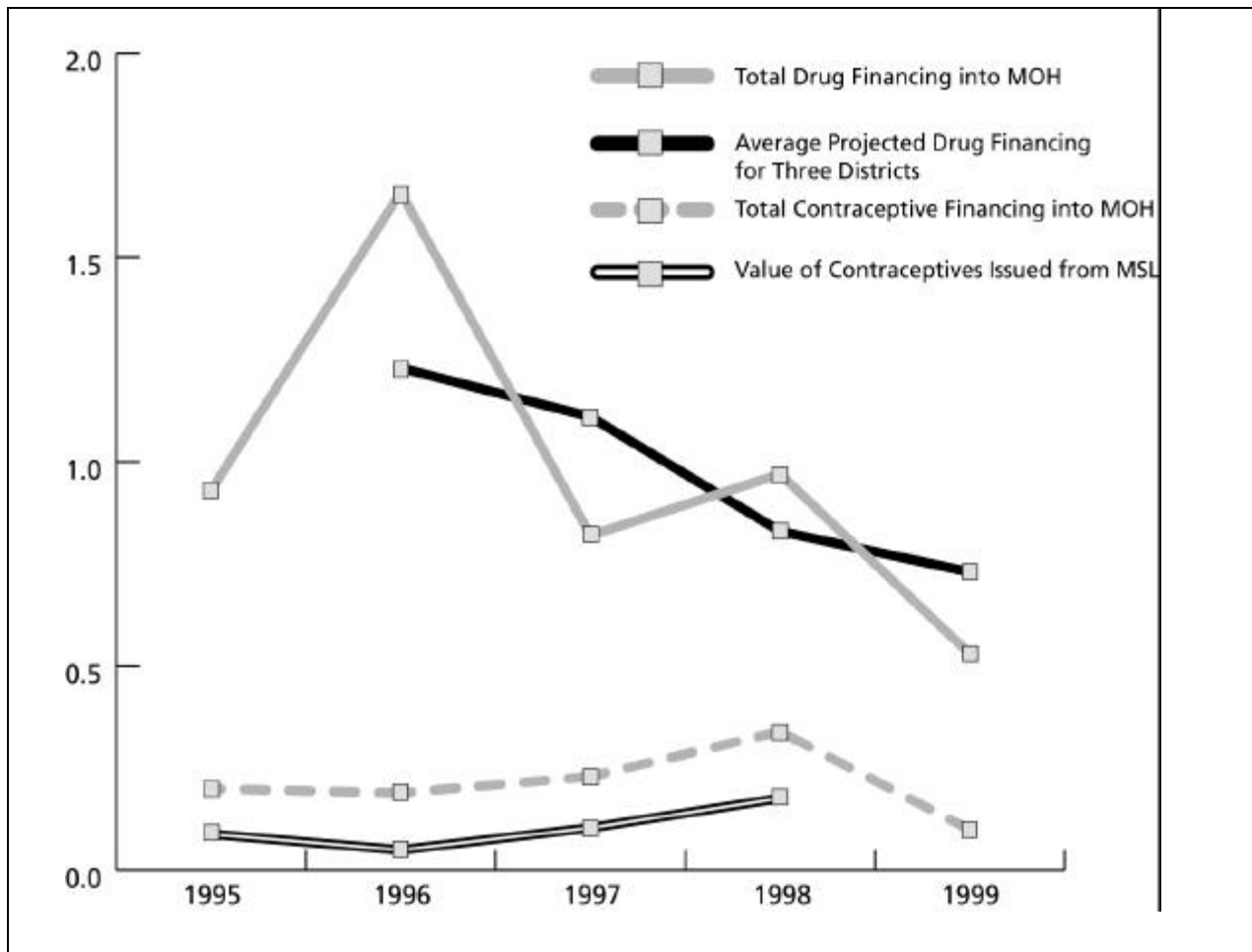
* Includes estimates for the entire year.

To conclude the discussions on trends in logistics, the data summarized in table 9 suggests an important contrast between contraceptives and essential drugs for both total financing of supply and values of products issued from MSL.

- For contraceptives, the trends are generally positive, showing increases for both total financing and value of issues.
- For essential drugs, the trends are unclear for total financing and negative for drugs provided for three of the five districts in the sample.

The results are graphically represented in figure 5. By considering the factors associated with these contrasting results, it is possible to gain insight into how logistics performance has evolved since implementation of HSR. This topic is developed further in the next section. The estimates on which tables 6–9 and figure 5 are based appear in appendix B.

Figure 5.
Comparison of Contraceptive and Drug Financing in Current U.S. Dollars Per Capita



Source: Developed from tables 6, 7, 8, and 9 in this report.

4. Developments at Central Level

This report divides logistics developments into two broad categories: developments at the central level and developments at the district level.

Family Planning Services

The MOH in Zambia first established a Family Health Unit in 1979, and formally launched its family planning program in 1980, with support from the United Nations Population Fund (UNFPA). The Family Health Unit evolved into the Maternal and Child Health/Family Planning Unit (MCH/FPU), which coordinated services at the central level until the establishment of the CBOH in 1997. Prior to CBOH, the old MCH/FPU had six staff members, including specialists in family planning, adolescent health, safe motherhood, evaluation, demography, and logistics. Now, within CBOH, one person is assigned to this general area, the Reproductive and Child Health Specialist, placed within the Public and Clinical Health Division of the Directorate of Systems Development. The job description for this specialist encompasses all of child health, including integrated management of childhood illness (IMCI), nutrition and immunization, and all of reproductive health, including safe motherhood. The evaluation and logistics functions for this portfolio are placed in other directorates of the CBOH.

Method Mix

By 1988, Zambia's method mix had evolved to include eight products: two oral contraceptives (progestin-only and a combined oral contraceptive), two intrauterine devices (IUD) (Cu T 380A and Lippes loop), one injectable (Noristerat), two vaginal foaming tablets (VFT) (Conceptrol and Neo-Sampon), and male condoms. Zambia endorsed the recommendations from the 1994 ICPD, which shifted from demographic target-oriented family planning programs to an increase in the availability and quality of reproductive health services. In 1995, this led to a broad-based contraceptive needs assessment. The assessment recommended fundamental changes in the provision of reproductive health services and the composition of the method mix.

The revised method mix consisted of 10 products. In principle, the following products should be available at all hospitals and health centers: two oral contraceptives (progestin-only and a combined oral contraceptive), one injectable (Noristerat), one VFT (Neo-Sampon), and male and female condoms. In addition, at facilities where trained staff are posted, one IUD (Cu-T) and one emergency oral contraceptive (PC4) should also be available. In two special programs, Norplant[®] and Depo-Provera[®] should also be available.

While the current method mix may offer consumers broader choices than before, it does not represent a net change in the number of different generic products handled by the logistics system. Before the revision, there were eight products, now there are 10. Of the 10, only eight are products managed by the MOH logistics system. (Norplant and Depo-Provera are managed by the University Teaching Hospital and CARE.) What has changed over the years is that the MOH has reduced the number of separate brands procured for some generic products. For example, in 1994, five preparations of combined oral contraceptives were procured (Eugynon, Lo-Femenal, Microgynon, Neogynon, and Nordette), and now only Microgynon is procured. For the progestin-only pill, two preparations were procured and now only one is (Barraclough 1999b). From the logistics point of view, this is a positive development that simplifies not only procurement but storage, transport, stock control, and dispensing.

Family Planning in Reproductive Health Strategy

Development of the new method mix was one element of a broader development—the formulation of a policy framework, strategies, and guidelines (MOH/Zambia 1997a). This work began in 1994 and continued until mid-1997, when *Family Planning in Reproductive Health: Policy Framework, Strategies, and Guidelines* was published. While this document is an important part of the strategy, it also gives direction on other important topics, such as “Strategies for Improving Access to and Quality of Care for Family Planning Services” and “Target Groups for Reproductive Health” (MOH/Zambia 1997a).

Training and Communications

During the time the MOH was formulating the guidelines, work also went forward on communications and training activities. With the assistance of bilateral projects, MOH staff developed the national family planning logo in 1996 and new training curricula for service providers in 1997. In 1998, training and communications personnel expected implementation of the new training curriculum to go ahead. However, this expectation was overtaken by events. In late 1997, the MOH published its *Integrated Technical Guidelines for Front Line Health Workers* (CBOH/Zambia 1997a). At about the same time, the MOH also developed a training curriculum for a new type of service provider, the public health practitioner (PHP). The MOH would train selected staff as PHPs; they would provide all the services called for in the EHCP. The PHPs would be the embodiment of integration in the clinical workplace. In light of this development, the new family planning curricula appeared to be a reverticalization of services, and the MOH postponed implementation. This problem might have been resolved through negotiation. However, before the concerned parties could accomplish this, a new minister arrived in April 1998, and new training activities were put on hold, although some previously scheduled activities were allowed to proceed.

As of August 1999, (1) the logo was launched; (2) a limited amount of training with the new family planning curriculum took place in Lusaka, Kitwe, and Livingstone; and (3) some effort had been made to confine use of the logo to sites where trained staff are in place. It is unclear to what extent this has been successful. The MOH has not implemented the PHP curriculum and, due to the hold on training activities, it has not rolled out the training in family planning beyond the urban districts of Lusaka, Kitwe, and Livingstone.

The MOH has implemented the new method mix for purposes of selection and procurement, but, in general, it appears that the Ministry has not trained care providers to promote it as intended. Interviews and data collected at SDPs suggest that health workers are not familiar with some products and therefore decline to prescribe them. This at least raises the question of whether demand is affected. If demand were affected, this would mean that the complexities of integrating clinical services have contributed to unintended consequences for contraceptive logistics.

Contraceptive Logistics

As noted earlier, through the bilateral Contraceptive Supply Project, DFID has financed most of MOH’s contraceptive supply since 1995. The CSP also provided technical assistance in logistics management. The project documentation, including baseline report, visit reports, midterm evaluation, and completion report, provide good descriptions of the most important developments in contraceptive logistics since 1993. The following discussion relies extensively on that documentation.

Contraceptive Supply Project and Contraceptive Commodities Logistics Unit

Prior to 1993, the Planned Parenthood Association of Zambia, not the MOH, distributed contraceptives in the public sector. In 1994, the MOH took control of its own contraceptives logistics. At that time, the vertical programs were still operating, and the MCH/FPU became responsible for coordinating contraceptive distribution. For this reason, it was logical for this MOH unit to manage the CSP when it started in early 1995. The MCH/FPU, however, was not well equipped to handle a logistics project, and so a Logistics Management Unit (LMU) was set up. DFID helped strengthen the institutional capacity of the LMU by providing resources, such as equipment and technical assistance; DFID regarded the LMU as the key implementing agent for the project.

The LMU later evolved into what is now known as the CCLU. The staff has always consisted of one contraceptive logistics specialist and, at times, an assistant. The logistics specialist has received on-the-job training from DFID and FPLM short-term consultants and has attended the contraceptive logistics training course conducted by FPLM.

Since 1995, with financial support from DFID and other donors, and working through the CCLU, the MOH has been able to maintain, at the central level, adequate stocks of the products in the method mix, most of the time. Some problems developed, such as supplies arriving in poor-quality packaging and delays in customs clearance. Nevertheless, events in contraceptive logistics since 1995 have taken place within the context of a generally sufficient supply.

Contraceptive Logistics 1995–1999

Early on, there was an unclear division of responsibilities between the MCH/FPU and the LMU. Reportedly, there was little interest at the MCH/FPU in the logistics data produced by the LMU, and the LMU was unaware of the types of data available at the MCH/FPU. For both units, there was insufficient information about contraceptive stock positions at the district level. By the end of 1995, however, the LMU had operational fax equipment and phone lines, and many districts were sending in monthly stock-level reports. Then, in 1996, the LMU lost its phone lines, resulting in a collapse of this early effort to build an LMIS.

Since MOH began managing contraceptives in 1994 and through 1995, the inventory control mechanism had been a “push” system—the central level decided what quantities of what products to send the districts, and the districts made the same decisions for the SDPs. In 1996, reportedly without notifying the LMU or the districts, the MCH/FPU decided to shift to a “pull system”—the districts would inform the central level of what products were needed and MSL would ship them. Without clear guidance on what was expected, the districts did not place orders, the intended pull system foundered, and there was a dramatic reduction in contraceptives issued from MSL for that year. Table 7 shows a sharp decline in the value of issues from MSL for 1996.

In 1997, the MOH transferred responsibility for managing the CSP from the MCH/FPU to the Department of Pharmaceutical Services (DPS). Later, when the CBOH was set up, DPS’s logistics responsibilities were transferred to its Services Support Division. During the transition, the Logistics Management Unit’s name changed to Contraceptive Commodities Logistics Unit.

Why the MCH/FPU decided to implement a pull system is unclear, but the move was very disruptive. In 1997, the CCLU re-established the push system and adopted a strategy of restocking the districts and SDPs. This explains the dramatic increase in the value of contraceptives shipped from MSL in 1997 (see table 7). After the pipeline was filled, the CCLU, with more preparation, attempted again to implement a pull system.

In its effort to establish a pull system, the CCLU sent letters in late 1997 to all districts explaining how the system was to work. The CCLU also provided *ad hoc* training in about 10 percent of the districts, 69 at that time. The new pull system relied on two forms that had been in use since before the MOH took over contraceptive distribution. One was the Family Planning Service Monthly Activity Record, which provided information on stock received, stock issued, and stock on hand. The other was the Requisition Voucher for Medical Supplies, which provides no logistics information except the list of products requested (see appendix C).

By early 1998, about 30 percent of the districts were sending the Monthly Activity Records Requisitions regularly. This enabled the CCLU to set up a database to capture status of consumption and balances at the district level. Also at this time, DFID commissioned a destination audit that showed 70 percent of all SDPs had available the contraceptive products they normally stocked (Barracough 1999b). This confirmed that the CCLU was successful with the replenishment strategy pursued in 1997.

An unfortunate step backward was taken in early 1999, when, after a long period of development, the MOH rolled out its HMIS. Districts were told that after they started sending in the monthly HMIS forms, it was no longer necessary to forward any other forms, although they could do so if they chose to. The districts stopped sending in the Family Planning Service Monthly Activity Records with their consumption and balances data, and the CCLU's second effort to put a system in place for tracking stock positions at the district level collapsed. The consequence of this, as will be seen in the discussion of developments at the district level, is that the logistics system has little capacity to regulate stock positions at the district and SDP levels.

The CCLU's response to this setback has been pragmatic. It tries to stay informed about the districts by sifting through the needs quantification tables that districts append to their work plans and the requisitions they send to MSL. After reviewing this information, the CCLU contacts districts that are not sending in requisitions and asks them for stock status reports. About 90 percent of districts do send requisitions on a regular basis, so the CCLU can concentrate its efforts on the relatively few exceptions.

Despite difficulties in implementing an LMIS that reaches down to the district level, other information management activities have gone well. The CCLU tracks receipts and issues of contraceptives from MSL and undertakes monthly reviews of stock positions there and for districts where it can obtain information. Using the data available, it prepares and revises forecasts and reorders stock every six months.

Efforts to Integrate Logistics Services

Integration is a theme that runs throughout Zambia's HSR program. Conceptually, it originates in the ESP, and one manifestation is the dissolution of the old vertical services programs and the concentration of their responsibilities in the PCHSD at the CBOH. Another manifestation is an attempt to implement a one-stop shopping approach at SDPs whereby most care providers provide all the services in the EHCP, eliminating special days for providing vaccinations or family planning counseling. Against this background, it is not surprising that the MOH has also attempted to integrate the logistics functions formerly carried out through the vertical programs into one unified system.

Forecasting and Procurement

Before establishment of the CBOH in 1997, vertical programs more or less separately managed their essential commodities, such as contraceptives, and program-specific lists of drugs or lab supplies, including mother and child health/family planning, essential drugs, universal childhood immunization (UCI), control of diarrheal diseases, nutrition, malaria, and HIV/AIDS. They financed their supplies from

the GRZ and/or donor funds and, to varying extents, performed the functions of forecasting, procurement, central storage, and transport. They did this work often without communicating with each other and with no overall coordination. The study team did not encounter written analysis of specific problems from this arrangement, but, anecdotally, informants referred to duplicate procurements of some products, procurement failures resulting in shortages of drugs in some programs, and high prices for certain drugs.

When the CBOH came into being, just as the clinical responsibilities of the vertical programs were delegated to the PCHSD, so were their logistics responsibilities delegated to the SSD. Since then, in place of several vertical programs that separately pursue financing, forecasting, and procurement of supplies, one division coordinates work for all services. The SSD is headed by a pharmacist and three staff members, including a procurement specialist, logistics specialist, and contraceptive logistics coordinator.

The SSD does not manage procurements directly, but estimates needs, determines purchase quantities, evaluates tenders, and makes technical recommendations on the most appropriate suppliers. Essentially, the SSD forwards this proposal to the MOH Procurement Unit (MPU), which approves purchases up to K325 million, or about U.S.\$148,000 at current exchange rates, on its own authority. Larger amounts must have the approval of the Zambia National Tender Board (ZNTB).

When the SSD assumed its coordinating role, it planned to have one major tender annually that would cover anticipated needs for all programs. In practice, between the GRZ and donors, there are several procurements to manage. With up to three separate bodies (SSD, MPU, and ZNTB) involved in implementing multiple procurements while complying with the expectations of the respective funders, this situation is cumbersome and has caused some significant delays. This problem, along with nonavailability of funds anticipated from the GRZ, largely explains the fluctuation in estimated drug expenditures shown in table 6.

The study team could not locate any documents that compared the old arrangement of vertical programs pursuing their own procurements to the new arrangement. We do not know if more or less therapeutic benefit is purchased for the money spent now than before, or if product availability at SDPs is better or worse. Informants generally agreed, however, that procurement planning at the CBOH is better coordinated than before, but delays have been reported concerning implementation of specific procurements.

The problems summarized above apply to the GRZ and donor-funded procurements when the CBOH and MOH are managing the tendering process with release of funds contingent on “no objection” certifications. They do not apply to donor-funded procurements managed by the funding agency. Therefore, contraceptives have not been affected by the problems described above.

Storage and Distribution

In addition to integrating the forecasting and procurement functions, the CBOH integrated most central-level storage. Prior to the creation of the CBOH, the Essential Drugs and MCH/FPU programs stored their drugs and contraceptives at MSL, but other vertical programs had their own storage facilities. MSL made monthly deliveries to districts, but only for the products it stocked. For other program products, in some cases the programs delivered to the districts; in others, the districts sent vehicles to pick up supplies. Vehicles coming in from the districts typically would make several stops to pick up everything required.

Disadvantages of this pluralistic arrangement are apparent. There were multiple channels for supply inputs to the districts, making it difficult for any party at either central or district level to ensure that districts received everything they needed. Limited transportation resources could not be used efficiently. A truck might leave MSL partially full, but leave needed supplies located at another storage facility

behind. The quality of MSL's storage space and stock control was relatively good, but some of the other facilities had leaky roofs and/or questionable stock control.

After the CBOH began functioning, supplies from most vertical programs were shifted to MSL. (An exception was the vaccines for the UCI program, which, because of their special handling requirements, remained at the cold storage facilities at the Old Medical Stores compound.) A stated objective was to create one-stop shopping for the districts with most supplies under one roof. The study team did not find a written evaluation of the results of this change, but it is difficult to imagine that it was not beneficial. Some problems lingered. For example, because of poor maintenance and lack of parts, MSL's fleet of trucks operated well below its intended capacity, and sometimes funds were not available to pay for fuel, which disrupted deliveries. Nevertheless, with this step, the MOH brought about an important and practical form of logistics system integration.

Implications of Shrinking Drug Supply

Under current arrangements, the MOH reserves 60 percent of its overall drug budget for the districts, 25 percent for general hospitals, and 15 percent for the University Teaching Hospital. The large share reserved for the districts supports HSR's goal of providing health care "as close to the family as possible." It is also an important assumption that underlies the decentralization of authority to the districts—that is, to maximize the drug supply at the district level and, to the extent possible, provide the DHMTs with the resources they need to meet the objectives of their work plans. As shown in table 9, however, for three of the districts in the sample, the estimated annual per capita values of drug supply appears to be declining steadily.

There are three principal sources for drugs in the districts: (1) a population-based quarterly allocation from bulk drugs in stock at MSL; (2) a population-based allocation of Rural Drug Kits and Community Drug Kits; and (3) drugs purchased directly by the districts with operating grants disbursed by CBOH. District-level drug purchases are supposed to be limited to 4 percent of the annual grants. Although local purchases sometimes rise above this ceiling, they make up a small percentage of the total value of drugs supplied.

In principal, the allocation of bulk drugs should function like an account, with each district's allocated funds equivalent to a prorated share of the value of the total supply. DHMTs should be able to order the products and quantities they estimate they will need, to the limit of these accounts. A DHMT's order is always subject to CBOH oversight concerning the appropriateness of the requests in terms of the EHCP and its work plans. Initially, the allocations were financial, but since February 1998, the CBOH uses numbers of units of products, rather than a financial ceiling, as the basis for determining district drug allocations.

The SSD projects the amount for each district's share annually, based on the total quantities of bulk and kit-packed drugs it expects MSL to receive from all sources. The allocations to districts are made quarterly, based on actual stock or stock in the pipeline from different procurements. When anticipated procurements are delayed or not implemented, the quantities allocated to individual district accounts are less than the central level originally projected and less than the districts expected.

For the districts in the sample, the study team compared the value of bulk drugs that the CBOH projected to be available at the beginning of the year to the value of drugs MSL actually shipped. Because of the nonavailability of records, it was only possible to make this comparison for the first eight months of 1999. The result was that the annualized value of drugs actually shipped during this period was between 33 percent and 50 percent of projections. These estimates were derived by multiplying the annual projection by 0.66 to obtain an estimated value for what should have been shipped by the end of August, and then

comparing the result with the values of drugs actually shipped. This means that for 1999, at least, the per capita value of drugs shipped was even lower than the figures given in table 9.

The same problem existed for the drug kits. For various reasons, the numbers of kits actually shipped to the districts have been declining since 1996, the last year the total numbers projected actually were shipped. For the districts in the sample, in 1997, MSL shipped 92 percent of the projected numbers of Rural Drug Kits; 50 percent in 1998; and the figure for 1999 is expected to be only about 42 percent.

CBOH's response to the reduction in bulk drugs and kits is to recalculate periodically each district's share based on what is actually available. The main point of this discussion, however, is that because of logistics developments at the central level, there are important consequences farther down the line.

One consequence is that decentralization for purposes of empowering DHMTs to make best use of drug resources to carry out their work plans cannot work as intended. Diminished drug supply effectively deprives DHMTs of choice and makes realistic local planning difficult. For example, one informant at the district level described having requisitions being returned with the comment "overdrawn" written next to certain products that were not provided. This occurred for requests for modest quantities of carbamazepine, vitamin B complex, and phenoxymethyl penicillin, even though the district had not ordered those products for several months. The informant did not know on what criteria the determination that the district was "overdrawn" for these products was made. Possibly the explanation lay in a recalculation of the district's prorated share, but if so, district-level staff apparently do not know about it.

Another consequence is that the scarcity of drug supplies at district hospitals and health centers negatively affects consumer confidence in the health system and constrains implementation of a range of important activities. A 1998 evaluation of district cost-sharing schemes conducted 60 focus group discussions in five districts and found that the lack of drugs was the most frequent consumer complaint about the health system. It concluded that "drug supply is clearly the most critical factor affecting the acceptability of user fees" (Daura et al. 1998). Along the same line, an assessment of barriers to meeting reproductive health goals identified drug shortages as a major constraint (Nanda 1999). The study did not attempt to examine the impact of drug shortages on the family planning program, but any factor that discourages consumers from going to SDPs could affect numbers of new and repeat contraception acceptors.

Changes at Medical Stores Limited

In late 1996, near the time the CBOH was established, a team of experts provided by SIDA, the World Bank, DGIS, and USAID evaluated the position of MSL. At that time MSL was a semicommercial limited company owned by the GRZ and governed by a board of directors with direct MOH supervision. Its mission was to procure, store, and distribute low-cost essential drugs and other supplies.

The motive for the team's work was summarized as, "A shortage of drugs and medical supplies is a major and recurrent problem in the Zambian public sector in spite of major government support of essential drugs for health centers" (Verhage et al. 1996). Although there were several contributing causes, the MOH and donors felt that improving operations at MSL was important for the success of the HSR program, in general, and implementing decentralization in particular.

The team concluded that "MSL is today unable to undertake bulk, international, competitive procurement of low cost essential drugs. Its capital is depleted and there is consequently no money to buy drugs. MSL is also overstaffed, with 276 persons on the payroll, an outdated management and financial system to account for income and expenditure, and an inefficient stock control system" (Verhage et al. 1996).

The team considered various options for restructuring MSL and recommended transforming MSL into a more autonomous operation, managed along commercial lines, in the support of the MOH services delivery system. It would transfer control of MSL from the MOH to an autonomous foundation, hire new and qualified management personnel, and set up a separately managed “health investment fund” (HIF) to finance drug procurement. The fund would allocate monies to MSL for drug purchases as long as management was efficient, but would withhold them if performance was unsatisfactory.

The team estimated that it would cost U.S.\$2.5 million to restructure MSL and that U.S.\$8.5 million would be required annually for drug purchases. Although it was not a specific recommendation in the team’s report, there was discussion between the MOH and the donors that donor funds or World Bank credits could be used to provide initial capital for the HIF. As the monies were spent, they would be replenished with GRZ funds, making the HIF a revolving fund.

In early 1997, the MOH brought in its own team of advisors who recommended engaging a qualified firm to manage MSL. The MOH apparently accepted this recommendation, managed a tendering process, and selected GMR, the firm managing Medical Stores Limited, as the contractor. The MOH took over the procurement function and GMR became responsible for putting the storage and distribution operations on a sound footing. In October 1997, GMR took over management of MSL with a five-year contract.

Since it began operations, GMR has renovated the storage facilities and offices, reduced the staff from 276 to 66, improved plant security, implemented an automated inventory control system, purchased five 10-ton trucks, and installed prefabricated drug storage units in districts. An evaluation of MSL’s operations is beyond the scope of this study, but GMR has given the facility an efficient commercial appearance.

With the MOH handling procurement, MSL’s responsibilities now focus on providing service to the districts and major hospitals. While the SSD determines the district allocations, MSL receives the requisitions, processes and packs the orders, and transports them to the districts monthly. MSL staff also reported that, in many cases, they transported stock all the way to health centers.

MSL staff emphasized that the MOH is responsible for procurement. They said that the DHMTs do not understand this, and feel that MSL is responsible for drug shortages. MSL staff observed that implementation of procurements valued at a U.S.\$6 million World Bank credit in 1997 and 1998 raised expectations that have not been met in 1999. They estimated that MSL is currently using only half its storage capacity.

Capacity-Building Activities

Since 1997, the MOH, through the CBOH, has undertaken a major restructuring of its central logistics operations. Achievements to date include—

- Improved coordination for planning essential commodities requirements for all services.
- All procurement actions channeled through the CBOH Service Support Division to the MPU.
- Integrated storage by concentrating supplies for all programs except UCI at MSL.
- Improved storage and transport operations by contracting management to GMR.

The MOH has also taken steps to improve DHMTs’ capacity to use this new system. Two separate training activities have been designed and implemented to give districts the skills necessary for estimating their contraceptive and drug needs, and managing these and other supplies at the district and SDP levels.

To begin with the second of these, the CBOH has implemented a new FAMS to support decentralization by providing a framework for a range of functions to be carried out at the district level, including accounting, transport management, stores management, equipment management, and facilities management. Working under this umbrella, an interdisciplinary team developed norms and procedures for stores management and included them in two manuals, “Stores Procedures for Health Centers” and “Stores Procedures for District Health Offices.” This team included staff with responsibility for contraceptives, drugs, lab supplies, and expendable medical supplies. This work, with the development of training materials, took place in late 1997. For the most part, the manuals codified existing practices and did not impose a new regimen.

Using a cascade strategy, members of the central team trained district staff on the contents of the manuals. The district staff included personnel responsible for the management of different categories of supplies, such as the family health nurse (contraceptives), pharmacy technician (drugs), and lab technician (lab supplies). The training lasted three days and covered topics such as preparation of storerooms, organization of supplies, stock record keeping, ordering supplies, issuing supplies, and supervision of stores personnel.

The plan called for district staff to return to their posts, implement the stores management procedures at the district health office, and then train hospital and health center staff. The CBOH pilot tested the package in 12 districts during the first half of 1998, and rolled it out to the 57 remaining districts in the second half of the year. CBOH staff stated that through this process, 2,200 workers at district and SDP levels received training in stores management. By the time the training was finished, the ban on new training activities had taken effect, and the CBOH could not provide follow-up training, even though concerned staff understood the need.

Approximately six months later, the CBOH launched a capacity-building strategy to quantify needs. As with the stores management training, quantification training would take place within the administrative matrix provided by FAMS. Central-level staff working with contraceptives, drugs, lab supplies, and expendables developed a manual and training materials. The target audience was those staff members at the district level who were responsible for supplies, plus the district “planning manager.” Thus, there would be some overlap with staff trained for stores management. There was, however, no need for subsequent training of SDP staff, as was the case with stores management training. Topics covered included district planning process, quantification process, specific quantification methods, reconciliation of needs, and budget needs.

Unfortunately, the MOH viewed the work on quantification as a “new” training activity, and did not allow it to go forward as scheduled. CBOH’s response has been to train staff in special “add-on” sessions held at periodic interdistrict meetings when possible. With so little time actually spent on instruction, it is probably more accurate to refer to what has taken place for quantification as an “orientation” rather than training. Given the relative complexity of “quantification” as a topic, it is questionable whether good results can be obtained in this way, but it is the best that can be done under the circumstances.

5. Developments at the District Level

Sample Design

The study team gathered information below the central level based on a sample design consisting of the following elements:

- Three regions, including the Northwest, Southwest, and Lusaka.
- Five districts, including Kabompo and Solwezi in the Northwest region; Itzhi-Tezhi and Mongu in the Southwest region; and the Lusaka urban district in the Lusaka region.
- Within each district, three SDPs, including three health centers and a hospital in Kabompo and Solwezi; three health centers in Itzhi-Tezhi and Mongu; and three health centers in the Lusaka urban district.

In sum, the sample design for Zambia consists of three regions, five districts, and 15 SDPs.

The study team organized into two field teams for work at regional, district, and SDP levels. Each field team consisted of one FPLM project staff member with competence in contraceptive logistics management and one Zambian nurse midwife with experience providing family planning services in the MOH SDPs.

The study team chose the sample purposively. One reason for this approach was CBOH's preference that the RHOs take the lead in suggesting districts to visit. Another reason, also originating with CBOH, was a feeling that many studies have confined themselves to the easy-access regions and districts along the rail line between Livingstone and Kitwe, and that the current study would be more useful if the sample were based on less-visited districts. (The study team felt that CBOH's preferences on these points are reasonable, especially the concern that the study be as useful as possible within Zambia.) Finally, given the time and distance between DHOs and SDPs, random sampling was not realistic logistically.

Taking these constraints into account, the study team selected sites for the sample as follows:

- First, the team collaborated with CBOH counterparts to select the regions to be visited. The Northwest and Southwest regions were selected because they both had remote rural districts that met the criteria of being distant from the rail line. Lusaka was chosen because it is a highly urbanized region, and Zambia is one of the most urbanized countries in sub-Saharan Africa.
- Next, the team specified two criteria for the RHOs to use in suggesting districts to visit. Of the two districts to be visited in the Northwest and Southwest regions, one should be perceived as relatively successful in implementing the HSR program, while the other should be perceived as struggling with implementation of the program. In addition, one district should have relatively easy access, while the other should have relatively difficult access.
- Finally, instructions to the two field teams were to select the SDPs as follows: if possible, one SDP should be the district hospital and, in addition, three health centers should be visited. Of the health centers, one was to be close to the district health office, one at a distance that allowed for travel out and back and completion of work within one day, and the third close enough to be visited in the time left for work in the district. This protocol was followed exactly in the Northwest region. The

team visiting the Southwest region and Lusaka urban district found that family planning services were offered in health centers only, so district hospitals were not visited.

Mandated Activities

Review of policy documents and manuals generated by the HSR program enabled the study team to develop a list of “mandated activities.” The most relevant documents were *Integrated Reproductive Health and Family Planning Strategy* (MOH/Zambia 1997b), *Handbook for District Health Board Members* (MOH/Zambia 1996), *Quantification of Medical Supplies* (CBOH/Zambia 1998g), *Manual on Stores Procedures for Health Centers* (CBOH/Zambia 1998f), and *Manual on Stores Procedures for Districts* (CBOH/Zambia 1998e). The mandated activities are measures that these HSR-related publications said would be used to strengthen logistics services. They are “process indicators,” useful for verifying whether the MOH and CBOH have completed their intended program for improvement. The list includes the following:

- Planning working groups would be formed at the district level to quantify contraceptive, drug, lab supply, expendable medical supply, and vaccine needs.
- Each district would have in its budget a line item for supervision.
- District staff would receive needs quantification training.
- District staff would receive stores management training.
- District staff, in turn, would provide stores management training to SDP staff.
- SDPs would stock the complete method mix—that is, at least six, and as many as eight, contraceptive products—consistent with the training the staff had received.

Findings concerning the first five mandated activities are presented in table 10. The table shows clearly that, for the districts and SDPs in the sample, CBOH and district staff largely implemented the program. Findings concerning the availability of complete contraceptive method mix are summarized in the following discussion of logistics results.

Table 10. Implementation of Mandated Activities

Activity	Implementation
Planning working groups established	4/5
Line item for supervision	5/5
District staff attended quantification orientation	4/5
District staff attended stores management training	5/5
SDP staff attended stores management training	10/15

Logistics Results

The review of mandated activities is useful for verifying whether measures intended to improve logistics at district and subdistrict levels have been carried out. It does not explain, however, how the logistics system is actually functioning. To measure this, the study team specified a list of “outcome indicators” to show what results were achieved when the program of mandated activities was implemented.

The list includes—

- Availability of complete method mix at storage sites and SDPs
- Stocks of contraceptives maintained at correct levels
- Consistent use of stock record cards
- Physical inventories completed
- Storage areas in good physical condition
- Supervisory visits completed
- Operational vehicles available at district level.

All of the results, except the last one, for operational vehicles, are explicitly or implicitly called for in the publications consulted. The operational vehicle indicator is included because it represents a “necessary condition” for achieving some of the other results.

Method Mix

Table 11 shows that for 22 sites visited, including 5 district health offices, 2 hospitals, and 15 health centers, it was unusual to find the complete method mix.

Table 11. Availability of Complete Method Mix

District	District Store	District Hospital	Health Centers
Kabompo	0/1	0/1	0/3
Solwezi	0/1	0/1	0/3
Itezhi-Tezhi	1/1	NA	0/3
Mongu	1/1	NA	2/3
Lusaka	0/1	NA	2/3
Total	2/5	0/2	4/15

At first glance, there appears to be a contradiction between the results of tables 11 and 5. Table 5, summarizing the results of DFID’s destination audit, shows “70 percent facilities with all products normally stocked” (Barraclough 1999b), while table 11 shows that only 6 of 22 sites (27%) had the complete method mix.

There are two possible explanations for this discrepancy:

1. The sample for this study is small and nonrepresentative, compared to the sample for the destination audit, which covered 15 percent of all SDPs.
2. The two surveys used different criteria for positive outcomes.

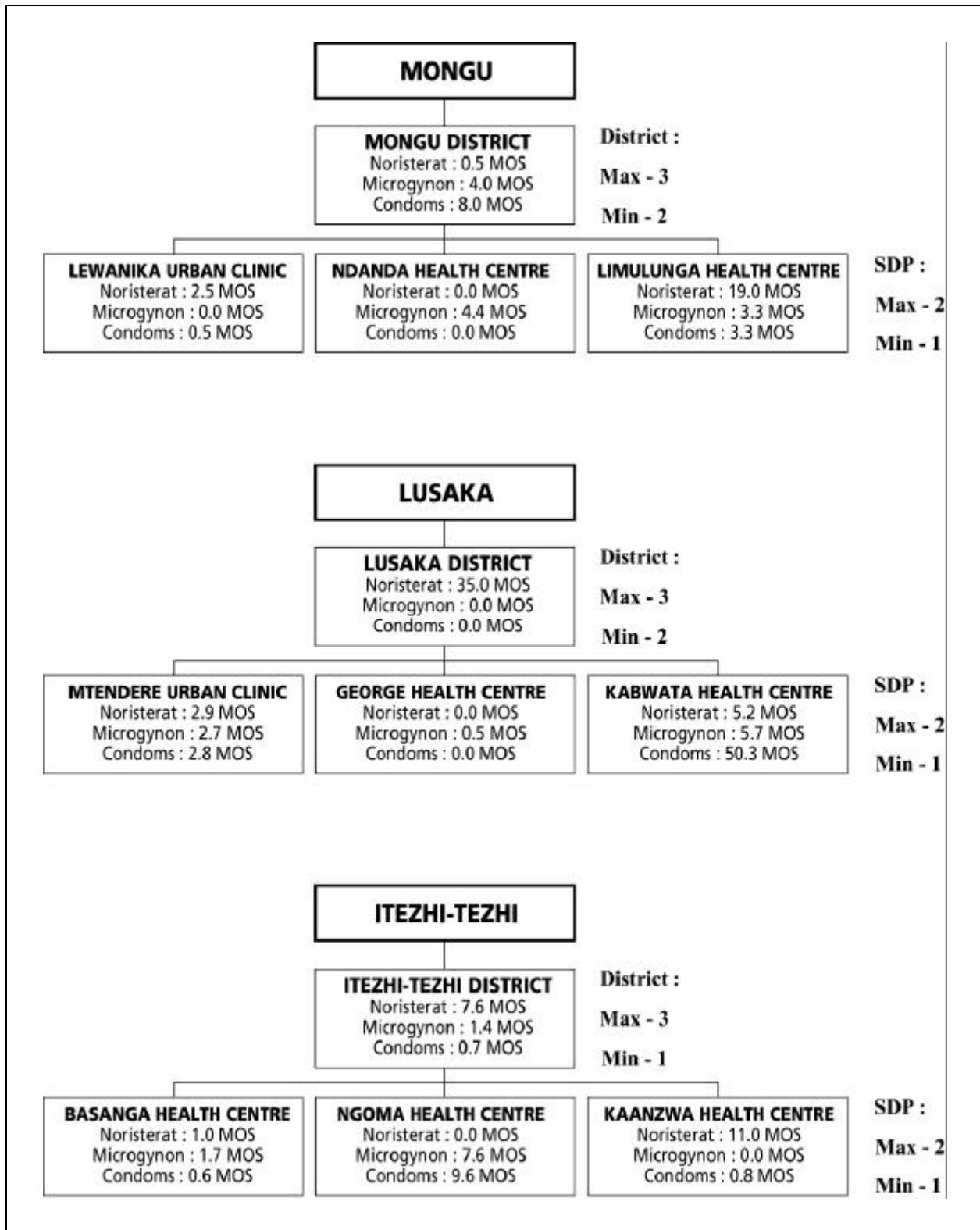
The best explanation is the second one. The destination audit used the list of products in stock at MSL as its criterion for a positive outcome. This study, however, used the more difficult-to-meet criterion of all products in the method mix. As noted in the discussion of selected trends, this study also found for its

small sample that the average number of products in stock was four. When this way of sorting the data is taken into account, this study's results are broadly congruent with the destination audit.

Correct Stock Levels

The study team was able to collect sufficient data to develop pipeline models for three of the five districts in the sample: Lusaka urban district, Itezhi-Tezhi, and Mongu. Delivery intervals between MSL and the districts, and between districts and SDPs, are both one month. According to the stores procedures manuals, for districts, safety stock levels should be two months, and maximum stock levels should be three months. For SDPs, the figures are one month safety stock and two months maximum. This means that stock positions for districts should always be between two and three months, and for SDPs between one and two months. Figure 6 shows the pipeline models for three high-demand products: Noristerat, Microgynon, and male condoms. It shows that, for these three districts, most sites did not have the correct stock levels for these items.

Figure 6.
Months of Stock on Hand by Service Level at Time of Study



Quantifying Needs

Table 12 shows that at four of five district health offices, staff could produce a copy of the manual, *Quantification of Medical Supplies* (CBOH/Zambia 1998g), and describe a correct method for calculating needs. Whether they could actually put this knowledge to use, however, is doubtful, as tables 13 and 14 show.

Table 12. Staff Ability to Describe a Correct Method for Quantifying Needs

District	Quantification Manual Available	Describes Correct Method	Method Described
Kabompo	Yes	Yes	Consumption
Solwezi	No	No	NA
Itezhi-Tezhi	Yes	Yes	Consumption
Mongu	Yes	Yes	Consumption ABC/VEN
Lusaka	Yes	Yes	Consumption

No Flow of Information

To use the consumption method to quantify needs, district staff must have access to reliable information on issues and balances for supply items, both at the district storeroom and at SDPs. However, the source document for this information, the Family Planning Service Monthly Activity Record, is no longer in use following HMIS implementation. District staff cannot obtain information routinely about issues and balances at SDPs. The central level has no routine way to obtain the same information for the districts. This is one of the most important points to be made for the entire country study. Needs quantification is not the only operation negatively affected. Lack of this information helps explain the prevalence of incorrect stock levels in figure 6. Staff at the central level cannot monitor stock positions at districts, and staff at the district level cannot monitor stock positions at SDPs.

Stock Record Keeping

Even if the Monthly Activity Records were still in use, it would be difficult for district and SDP staff to complete them accurately. This is because staff at most sites do not follow basic stock control procedures for contraceptives, such as maintaining stock control cards or taking monthly physical inventories. Tables 13 and 14 show results for keeping stock control cards and performing physical inventories.

Table 13. Consistent Use of Stock Control Cards for Contraceptives during the Past 12 Months

District	District Store	District Hospital	Health Centers
Kabompo	No	No	0/3
Solwezi	No	No	0/3
Itezhi-Tezhi	No	NA	1/3
Mongu	Yes	NA	1/3
Lusaka	No	NA	3/3

Table 14. Physical Inventory Taken by Staff during the Past 30 Days

District	District Store	District Hospital	Health Centers
Kabompo	No	No	2/3
Solwezi	No	No SCCs	0/1 2/3 No SCCs
Itezhi-Tezhi	No	NA	0/1 2/3 No SCCs
Mongu	Yes	NA	1/3
Lusaka	Yes	NA	2/3

Note: SCC = Stock Control Card

Storage Conditions

To gauge the quality of storage conditions, the study team rated storage conditions at district health offices based on 11 criteria. The list of criteria can be found in the questionnaires in appendix A. The team defined *good conditions* as a positive rating for 8 of 11 criteria and *bad conditions* as any score below that. Using this method, as shown in table 15, 15 of 22 sites (68%) were rated as having good storage conditions.

The team also found that, although the logistics system has achieved integration of storage at the central level, this is often not the case at district and SDP levels. At the district level, for example, staff members in charge of contraceptives, drugs, and lab supplies would be, respectively, the pharmacy technician, family health nurse, and lab technician. It was common to find these contraceptives, drugs, and lab supplies kept at separate locations. This is partly due to the lack of purpose-built stores at the district level; stock is fitted into whatever secure space can be made available. To help overcome this problem, MSL has been installing prefabricated storerooms at district health offices.

Table 15. Storage Conditions

District	District Store	District Hospital	Number of Health Centers Rated "Good"
Kabompo	Good	Good	1/3
Solwezi	Bad	Good	2/3
Itezhi-Tezhi	Good	NA	1/3
Mongu	Good	NA	3/3
Lusaka	Bad	NA	3/3

Note: Stores must meet at least 8 of 11 storage conditions to be considered "good."

Supervision

When the study team asked staff at the district and SDP levels about supervision, the results were consistently positive (see table 16). Staff at all district health offices stated that they supervised SDPs, and

staff at all SDPs stated that they recently received supervisory visits. Study team members verified these responses by asking for documentation. These excellent results are consistent with the finding that all districts in the sample had line items for supervision in their budgets.

Table 16. Supervision

District	District Claims to Supervise	Health Centers Report Supervision
Kabompo	Yes	Yes
Solwezi	Yes	Yes
Itezhi-Tezhi	Yes	Yes
Mongu	Yes	Yes
Lusaka	Yes	Yes

Note: All sites report that supervision is conducted quarterly.

Transport

Finally, as shown in table 17, the study team found that all districts had two or more functioning motor vehicles. While MSL staff stated that they delivered stock to all districts, staff in some districts in the sample stated that deliveries from central level were unpredictable, and they often had to send their vehicles to Lusaka for supplies. Staff at SDPs also stated that deliveries from the district level were sometimes irregular, and lack of transport for covering the great distances between districts and SDPs—for any purpose, not just logistics—was one of the most frequent complaints.

Table 17. Operational Vehicles

District	District Store	District Hospital	Health Centers
Kabompo	2	0	1/3 (Bicycle)
Solwezi	2	1	0/3
Itezhi-Tezhi	2	NA	1/3 (Bicycle)
Mongu	5	NA	0/3
Lusaka	3	NA	0/3

The results for transport and supervision are particularly interesting. For example, although supervisors from districts visit SDPs regularly, they probably do not focus on logistics issues; otherwise, the results for stock control cards and physical inventories would be better. Still, the fact that regular supervision takes place at all is an important achievement for the HSR program, and this development is an important asset that can be exploited in the future to benefit logistics operations. The same reasoning applies to vehicle resources at central and district levels. While problems with distribution may persist at all levels, a program for improvement is under way. Availability of functioning vehicles at the district level is an important resource that should positively affect the success of these efforts.

6. Findings

Cross-Cutting Issues

Based on the conceptual framework, this study has attempted to associate changes in specific logistics functions with HSR and other elements of change. Some issues are “cross-cutting” in that they affect the whole complex of change, not just one logistics function. These include timing, coordination, and financing. Discussion of each of these topics follows.

Timing

Systematic efforts to improve contraceptive logistics in Zambia coincided with development and implementation of the HSR program, making the Zambian case a particularly important one for this study’s objectives. The GRZ announced its intentions in 1991, and from 1993 through 1997 there was intense activity in the HSR components: restructuring; decentralization; systems development and capacity building; development of the ESP; and development of the post-Cairo reproductive health and family planning strategy.

Efforts to improve contraceptive logistics began in 1995 with the MOH/DFID Contraceptive Supply Project and continued through 1999, but with diminished intensity since the project ended. Efforts to improve the logistics system in general—for all product categories, not just contraceptives—began somewhat later, in 1997 and 1998.

Coordination

This study describes activities to improve logistics services, including—

- Setting up the CCLU.
- Developing an LMIS (attempted by the CCLU).
- Coordinating procurement planning for all product needs at the central level.
- Integrating storage of vertical program supplies at MSL.
- Contracting out management services at MSL.
- Decentralizing needs quantification and budgets for contraceptives, drugs, and other essential commodities to the district level.
- Carrying out training programs for needs quantification and stores management at district and SDP levels.
- Arranging routine supervisory visits for SDPs.

Viewed in retrospect, this appears to be a systematic and reasonably comprehensive program for improvement. As events actually unfolded, however, many activities lacked adequate coordination, either internally or with other HSR program components. The following are examples:

- Following the implementation of the HMIS, the CBOH informed districts that they no longer needed to forward Monthly Activity Reports for contraceptives. The replacement of these reports by the HMIS meant a loss of data critical to logistics system monitoring, data which the HMIS does not collect. The CCLU is unable to achieve good monitoring of logistics system performance at the district and SDP levels, an unintended consequence of the HMIS that affects all product categories, not just contraceptives. For example, the slimmed down data on immunizations provided by the HMIS make it necessary to develop new algorithms for calculating vaccine wastage, which traditionally has formed the basis for calculating the number of multidose vials.
- Only with some difficulty could the staff working on FAMS be convinced that all supplies were not the same; that contraceptives, drugs, and lab supplies had special requirements; and that product-specific training in quantification and stores management for these commodities was required. A good start was made, but the suspension of new training activities has impeded further progress. Consequently, results so far are not as good as they could be.
- Although the integration of storage at the central level was achieved, staff at the district level usually keep their stocks of contraceptives, drugs, and lab supplies in separate locations. A possible reason for the poor record for maintaining stock record cards for contraceptives is that staff believe the cards are required for drugs but not for contraceptives. Central-level staff have not conveyed the message successfully for integration of logistics services to lower levels of the system.
- Districts have achieved real success in bringing about routine supervision of SDPs. However, the disappointing results for availability of the complete method mix or following inventory control procedures suggest that the supervisors do not feel responsible for logistics operations. If they are familiar with the content of the stores management training, they are not applying their knowledge during their site visits.

There is a paradox in this situation. The HSR program, with its emphasis on providing quality health care closer to the family, has been an important stimulus for the MOH to improve logistics services. Yet, the very complexity of the HSR program, with the design and implementation of so many activities within different program components in a relatively short time, has been an impediment to good coordination.

While the various activities for improving logistics services are all appropriate steps to take, they have been implemented, in some important cases, in response to felt needs at certain times rather than as an intentional comprehensive program. The problems discussed earlier can be solved, but because new training activities, supervision, and troubleshooting from the central level are difficult to carry out under current conditions, it is difficult for the CBOH to respond.

Financing

The financing of contraceptives apparently has produced a sufficient supply to meet the demand. Since 1995, the CSP has provided 71 percent of the funding. USAID has also made an important contribution—28 percent. CIDA has provided about 1 percent. Per capita expenditures and value of contraceptives issued from MSL increased during 1995–1998, a period that coincided with some of the most important events in the HSR program implementation. The funding agencies for contraceptives directly manage procurement and transport to MSL through their respective systems.

Adequate contraceptive supply contrasts with the situation for essential drugs. Although the study team did not encounter survey data for drugs comparable to the DFID destination audit, anecdotal evidence exists that SDPs are chronically short of drugs. MSL exhausted its supply of Rural Health Kits in June 1999, and a new supply of these important items was not expected until December 1999. Estimates based on figures provided by the CBOH suggest that overall drug financing has fluctuated for the MOH, and may be declining for districts.

In December 1999, WHO Essential Drugs and Medicines program staff provided the study team with the following informal guidelines for gauging adequacy of government financing for primary health care drugs at the national level:

<i>Inadequate</i>	Less than U.S.\$1.00 per capita
<i>Adequate if well managed</i>	U.S.\$1.00 to U.S.\$2.00 per capita
<i>Good</i>	More than U.S.\$2.00 per capita

By these rough measures, per capita drug financing for the three districts, Mongu, Kabompo, and Solwezi, is inadequate. While this is a very small sample, if further investigation shows these results to be representative, then it is difficult to understand how the EHCP could be implemented by the DHMTs.

Determining why there are problems with drug financing is a delicate matter. GRZ budgetary funds, World Bank credits, and grants from bilateral donors are all used to finance drugs, but apparently, there are divergent expectations between the MOH and some donors on some matters, causing delay or cancellation of some drug procurements.

Key informants, especially individuals working for donor agencies, have provided anecdotal information on this topic. The study team did not find much documentation on the problem; however, both the *Sector Program Assistance Agreement between the Government of Zambia and the United States of America for Essential Health Care* (USAID 1999) and the *Joint Procurement Mission Review between the Ministry of Health, the Central Board of Health, and the Collaborating Partners* (Bartling et al. 1998) allude to it. Reported problems include significant reduction in GRZ funding for essential drugs, beginning in 1997; withdrawal of funding for kits by one donor due to dissatisfaction with the process for selecting the MSL management contractor; and delays of anticipated procurements with World Bank credits.

Focus on Contraceptive Logistics

The MOH, amply supported with resources from DFID through the CSP, has increased the availability of contraceptives at SDPs significantly since 1993. Concomitantly, CPR has increased; still, many problems persist. In the opinion of the study team, the summary below is a fair assessment of what has been accomplished.

Contraceptive logistics in Zambia, which currently enjoys sufficient supply to meet demand, has achieved a basic level of effectiveness in ensuring product availability at SDPs. However, the system is not very efficient. It is unable to regulate itself to maintain appropriate stock positions at district and SDP levels, or to provide sites with the complete method mix. This produces negative implications for system operating costs, product availability, and quality of family planning services.

The problem with supply of complete method mix is arguably associated with insufficient coverage of the intended training program for family planning managers and service providers. This, in turn, may affect demand for some items. Interviews with service providers at the SDPs in the sample revealed that many, if not most, are not well informed on the following issues:

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- Need for maintaining the complete mix in stock
- How to use certain methods
- When to recommend a particular product
- How to counsel patients about side affects for certain products.

As a result, they do not request unfamiliar items.

Much has been accomplished, but the challenge for the future will be to make the important step up from a system that is crude but somewhat effective to one that is refined and efficient. Table 18 summarizes the accomplishments and constraints revealed by the information gathered.

Table 18. Accomplishments and Constraints in Contraceptive Logistics

Accomplishments	Constraints
<p>General</p> <p>At the CBOH central office, the reform process has appointed a knowledgeable staff who appreciate the importance of logistics for achieving the HSR program's objectives.</p>	<ul style="list-style-type: none"> ✘ Inputs needed to improve logistics within the context of HSR are underestimated. ✘ Insufficient coordination among logistics and other HSR activities. ✘ MIS emerging from reforms are not sufficient for logistics management.
<p>Product Selection</p> <p>Integrated reproductive health and family planning strategy resulted in an updated method mix and reduction of multiple brands of single generic products.</p>	<ul style="list-style-type: none"> ✘ Complete methods mix often not available at SDPs. ✘ Service providers often not trained in all methods.
<p>Financing</p> <p>Since 1995, financing has been stable and contraceptive supply increased.</p>	<ul style="list-style-type: none"> ✘ DFID-financed Contraceptive Supply Project ended in 1999. ✘ Apparent decline in drug supply at district level negatively affects public confidence and quality of care for an integrated reproductive health and family planning program.
<p>Forecasting</p> <ul style="list-style-type: none"> ✘ CCLU staff at central level are trained and capable of forecasting overall contraceptive needs and converting this information into order quantities. ✘ Staff at district level have received orientation in needs quantification for contraceptives, drugs, and lab supplies. 	<ul style="list-style-type: none"> ✘ Existing MIS does not provide the CCLU with the information required to do this work optimally, so forecasting must be based on issues rather than the preferred dispensed-to-user data. ✘ Time allotted for quantification training not sufficient for this multistep task, so the effectiveness of this training is doubtful. ✘ Information available to district staff is not sufficient to do quantification as intended.

Accomplishments	Constraints
<p>Procurement</p> <ul style="list-style-type: none"> ✔ CCLU staff at central level know how to work with DFID and USAID supply systems to launch procurements. ✔ Efforts to integrate overall logistics services at the central level have improved coordination of procurement planning for all product categories. 	<ul style="list-style-type: none"> ✔ Some problems have been reported with the DFID procurement agent—for example, providing contraceptives with substandard packaging. ✔ The MOH has been unable to clear incoming contraceptives from customs in a timely manner, resulting in demurrage charges. ✔ Situation where procurement responsibilities were split between CBOH's Service Support Division and MOH's Procurement Unit has caused some apparent inefficiencies.
<p>Storage, Inventory Control, and Transport</p> <ul style="list-style-type: none"> ✔ Integrating storage of former vertical program products at MSL with unified transport services to the district level improves access to the range of required products. ✔ Contracting out management of MSL resulted in improvements in the physical plant, inventory control, security, and transport at the central level. ✔ MSL contractor providing prefabricated storerooms to districts should improve storage conditions at that level. ✔ Functioning vehicles are available at district level. ✔ Implementation of FAMS, the financial management and administrative system. 	<ul style="list-style-type: none"> ✔ Earlier, there was a lack of fuel for transport, which disrupted distribution of contraceptives and other supplies. ✔ District staff do not understand the division of logistics responsibilities between the CBOH Service Support Division and MSL. ✔ Stock control procedures at district and SDP levels appear to be weak, which contributes to the general problem of insufficient flow of logistics information. ✔ Storage is often not integrated at district and SDP levels. ✔ Complaints have been made about erratic transport service from above at both district and SDP levels. ✔ HMIS and FAMS not developed in a coordinated way, possibly accounting for lack of useful logistics data in the HMIS.
<p>Human Resources</p> <ul style="list-style-type: none"> ✔ Logistics training program for district and SDP staff, with appropriate objectives, was designed and implemented. ✔ Supervision from district to SDP levels apparently performed regularly. ✔ Training activities were developed to help care providers stay current with the new integrated Reproductive Health and Family Planning services strategy. 	<ul style="list-style-type: none"> ✔ Training interventions and follow-up not yet sufficient to produce satisfactory conditions at district and SDP levels. ✔ Circumstances prevent central and provincial staff from undertaking further supervision and/or training activities for logistics. ✔ District supervisory visits not focusing on logistics tasks. ✔ Circumstances prevent systematic large coverage implementation of training for family planning services.
<p>Product Availability</p> <p>Significant improvement in contraceptive availability during the past five years.</p>	<ul style="list-style-type: none"> ✔ For this study's sample, complete method mix seldom available. ✔ Anecdotally, stockouts of drugs are chronic and widespread.

Implications of Health Sector Reform

Zambia's decision to reform its health sector led directly to a number of important initiatives to improve logistics. For contraceptives in general, logistics services were in disarray prior to the start of the MOH/DFID's Contraceptive Supply Project in 1995, but, in stops and starts, the situation has improved.

Contraceptive availability has increased during implementation of HSR in Zambia. Certain well-aimed interventions, such as improved coordination of planning and procurement, integration of storage at central level, and improved management at MSL, have obvious potential to strengthen logistics services for all product categories. Nevertheless, important deficiencies persist at district and SDP levels. In the opinion of the study team, the financial and technical support provided by the bilateral CSP, rather than HSR, is the most important factor behind improved contraceptive availability.

While HSR has not adversely affected contraceptive availability, neither is there evidence that certain important HSR innovations have benefited logistics management for contraceptives or essential drugs. Observations concerning decentralization, capacity building, management information systems, and partnership between MOH and donors follow.

Decentralization

In all districts in the study sample, respondents spoke positively about decentralization, identifying it as the most important feature of the HSR program. In principle, this major structural reform allows local decision makers to decide how to use resources according to approved work plans. Yet, respondents also commented consistently that, as time has passed, the resources available to them have decreased, and they are not sufficient for the job at hand.

It is difficult to make a case that decentralization has benefited logistics when management information systems do not produce useful information on consumption and balances for contraceptives or drugs. “Local choice” is the essence of decentralization, but financing is not sufficient for a supply of drugs large enough to enable district managers to make choices about products and quantities.

Capacity Building

Respondents spoke positively about capacity building and HSR innovation. They frequently mentioned that various training activities had prepared them for the intimidating responsibilities of managing district health services to achieve HSR’s objectives. Capacity building for stores management and quantification training, or routine supervision, however, has not yet produced good results for logistics at district and SDP levels. This is demonstrated by the prevalence of inappropriate stock positions at different levels of the system and lapses in stock record keeping. (Storekeeping, however, is a bright spot.)

Management Information Systems

The HMIS and FAMS are tools that enable managers at both the central and district levels to base their decisions on routine flows of public health and management information. Training to operate these systems has been a prominent part of capacity-building activities. However, these systems do not provide the information required for managers at higher levels to monitor logistics performance at lower levels.

Information on appropriate district-level contraceptive stock positions is not available to the CCLU. The same is true at districts for SDP contraceptive stock positions, and for other product categories. Unfortunately, for contraceptives at least, one change introduced in association with the HMIS reduced the flow of logistics information—that is, SDPs and districts no longer forward the Monthly Activity Reports.

According to CBOH staff, the rationale for eliminating this report was that, with decentralization, districts would manage their stock levels rationally, according to local needs, and the upward flow of the activity reports was unnecessary paperwork. If this was the reasoning, it was faulty, as demonstrated in figure 6. Note also, that such reasoning is contrary to modern logistics practice, where order quantity decision

making may be decentralized, but information management is highly centralized, enabling managers at the top to monitor overall system performance and correct problems when they occur at lower levels.

Partnership between MOH and Donors

The theme of partnership between the MOH and Zambia's community of assistance agencies figures prominently in HSR program literature. In fact, the preferred term for the MOH and donors as a group is *cooperating partners*. There are concrete manifestations of this relationship—for example, there are biannual meetings of the partners: one meeting in the spring is devoted to reviewing the previous year's progress, and the other meeting in the fall is devoted to planning resource inputs for the coming year. Another example is the district basket fund. The study team did not examine the evolution of this aspect of HSR in Zambia closely, but one obvious benefit is the CBOH's cadre of the world's most accessible and cooperative counterparts.

However, partnership arrangements are not perfect. Financing for contraceptive supply, based on traditional donor-managed procurement arrangements, has been more constant than financing for drug supply, wherein acquisitions of major portions are based on shared responsibilities between MOH and specific donors (see tables 6 and 8 and figure 5).

This study does not argue for or against such partnership arrangements. Rather, the study compares the results when two different approaches are used to procure essential commodities. The results include drug procurements that have been based, in some important cases, on mutual expectations between the MOH and donors. There are differing opinions over whether one party or the other has lived up to expectations, and drug financing appears to be vulnerable to disruptions not experienced for contraceptives.

7. Recommendations

General

1. The MOH, CBOH, and other cooperating partners should regard the state of logistics for contraceptives and other essential commodities optimistically. Most of the steps aimed at improvement are appropriate, even if problems with coordination and measured results are not yet satisfactory. With sufficient resources and increased effort, logistics services should improve. Abandoning the good start already made will certainly move services backward.
2. Taking inventory of strengths and constraints presented in table 18 as a starting point, the CBOH should formulate a distinct “Logistics Services Improvement Plan” that would try to resolve the identified problems practically. It should be compatible with other current work plans, and should—as its primary goal—improve coordination for logistics-related activities.

Management Information Systems

3. One major constraint to improvement is the absence of an upward flow of information on consumption and balances at subordinate levels of the system. The problem could be resolved without serious revision of the HMIS or FAMS. With a redesign of the requisition form to include columns for the missing information, the staff at higher levels automatically will receive the information needed to monitor system performance. The requisition would then become a “requisition/reporting form.”
4. Develop a centralized and automated Logistics Management Information System to process the information provided by the new requisition/reporting form. This would enable the CBOH to monitor stock positions at district and SDP levels and provide feedback to district managers. The CBOH would be able to work with provincial staff to troubleshoot problem districts systematically. It might be assumed that this function is already handled through the HMIS, but it is not.

Capacity Building

5. Find an appropriate way to follow up on the training for quantification and stores management. These activities were the right thing to do, but they have not yet produced good results. Some of the material covered, such as stock record keeping and quantification, is difficult to master. If the MOH cannot approve major training gatherings, it might be possible to train a cadre of provincial staff who would be responsible for providing training to district staff in their own posts on an itinerant basis.
6. Following the preceding recommendation, updated district staff should work with SDP staff during supervisory visits, identifying and correcting deficiencies in storekeeping and record keeping. Responsibility for monitoring logistics operations at SDPs should become an explicit part of the supervisory routine.
7. Family planning service providers should receive training on the complete method mix and the appropriate use of its products. Staff working in this area are aware of this problem. Given the complexity of the care provider training situation, this recommendation is easier made than

implemented. Part of the solution to resolving the incomplete method mix at SDPs is to create demand. Often, care providers do not order or offer contraceptives with which they are unfamiliar or that they have not been trained in using. Ensuring a complete method mix at SDPs is a job for training and communications staff working with care providers, not logistics staff.

Financing

8. The study team hopes that DFID will fund a follow-on project to the current Contraceptive Supply Project. Contraceptive procurement needs continued financing. This study amounts to an independent evaluation of the CSP, and despite many frustrations, the project has accomplished a great deal.
9. CBOH staff should validate the estimates developed for drug financing. They were developed under time pressure, and the results are only preliminary. The data for district level should be developed for a larger sample of districts. Further validation is recommended because the data suggest a disturbing trend of diminishing drug supply at the district level. If this is correct, major components of HSR, such as the essential services package and decentralization, are seriously compromised.
10. The team does not wish to make recommendations concerning improvement of drug financing at this time because of the delicate issue of partnership arrangements and the fact that the study's analysis of this issue is based on preliminary estimates.

Appendix A
Questionnaires for Data Collected at District
and SDP Levels

John Snow, Incorporated

Family Planning Logistics Management Project

Implications of Integration and Other Elements
of Health Sector Reform for Family Planning Logistics

Instrument C : District Level Questionnaire

Date ___/___/___ Form # N/S _____ Interviewer _____ District _____

Respondent Information

Title : _____ Qualification : _____

Length of time in current position : _____ years _____ months

Topics Covered in this Interview

- [] I. Health and Family Planning Services
- [] II. Health Reform Program
- [] III. Direct Effects of Health Sector Reform on Contraceptive Logistics
 - () General Questions () Finance-Related () Human Resources
 - () Quantification () Stores Management () Transport
- [] IV. Indirect Effects of Health Sector Reform on Contraceptive Logistics

Notes (Follow-up questions, other contacts):

Interview	Interview
Start Time _____	End Time _____

(Note: Thank respondent for taking the time to meet with us. State who we are, explain the objective of the study, define 'health sector reform/changes' and 'logistics management', state who else we will be talking to (broad categories), gain support/permission for interviewing staff at lower levels.)

I. Health and Family Planning Services

(Interviewer: "We would like to begin by addressing health service delivery in Zambia.")

C101 In your opinion, what are the most important issues or problems facing the following programs or services in this district?

(Note: Prompt for at least one answer in each category.)

- Reproductive Health and Family Planning
- Primary Health Care
- Immunization
- STD/HIV

II. Health Reform Program

(Interviewer: " In recent years, Zambia has implemented an extensive program of Health Reform. We would like to begin by briefly discussing your impressions.)

C201 How have the reforms affected work within this district?

(Note: This open-ended question is intended to get at general effects of any changes that have taken place. It sets the stage for the more focused questions that follow on indirect and direct effects on contraceptive logistics. Be prepared to prompt responses for the topics below.)

- Division of MOH into MOH and CBOH
- Decentralization and creation of District Health Management Teams
- Integration of Health and Family Planning Services
- Integration of Logistics Services
- Cost Sharing
- HMIS and /or FAMS
- Other Health Reform related training activities

III. Direct Effects of Health Sector Reform on Contraceptive Logistics System

(Interviewer: “The effect of changes in the health sector, especially that of health sector reform, is far-ranging. We are interested in discussing ways in which these changes have both directly and indirectly affected the logistics system. Let’s begin with the current state of the logistics system.”)

8. General Questions

C301 In your opinion, what are currently the most important logistics problems facing contraceptives, essential drugs, vaccines and lab supplies ?

(Note: Within each product category, prompt for logistics components: Financing, Human Resources, Quantification, Stores Management and Transport.)

C302 How have the Health Reforms affected logistics management for contraceptives, drugs, vaccines and lab supplies?

(Interviewer: Refer to C201 in previous section. Prompt for ways in which the specific health reforms have affected logistics for these product categories, but with emphasis on contraceptives.)

Finance-Related

C303 In terms of financing for contraceptives, drugs, vaccines and laboratory supplies, are there any important differences between the way things are now and before the health reforms started? If so, can you describe the differences?

(Note: The two main possibilities are: First, that the amounts of financing or products available may have changed; and second, the procedures for budgeting and managing funds may have changed. Probe to get details on these points, as well respondents opinions on the whether any changes are beneficial or not beneficial. Probe for details concerning each of the product categories of contraceptives, drugs, vaccines and lab supplies.)

C304 Record below the names, units and purchase prices for up to 15 drugs purchased directly by the district for the most recent purchases executed (1999 only).

(Note: Districts have two sources of drugs. One is an account with EDMSS; and the other is direct purchase from commercial suppliers with district funds. The purpose of this question is to be able to compare the unit costs of locally purchased drugs with centrally purchased drugs.)

Brand Name	Generic Name	Form and Strength	Unit	# Units in Purchase Pack	Purchase Pack Price	Unit Cost	On EDL (Y/N)
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							

Human Resources

(Interviewer: “Now we would like to ask some questions about the staff who work in logistics.”)

C305 Since the beginning of the Health Reform program, have there been any changes in the staff available to work on logistics for contraceptives, drugs, vaccines or laboratory supplies? If there have been changes, can you describe them?

(Note: Possible answers include: No changes; more or fewer personnel available; changes related to qualifications of staff available; and comments related to any training that has taken place. Probe for the respondent’s opinions on whether or not any changes mentioned have been beneficial or not beneficial.)

C306 Is there one party, such as a logistics officer, in charge of all district level logistics?
 Yes No

Are there individuals designated as being in charge of different types of supplies, such as contraceptives, essential drugs, vaccines or laboratory supplies?
 Yes No

Who fills these positions and what are their titles?

(Note: Typically, contraceptives are managed by the public/family health nurse; drugs by the pharmacy technician; vaccines by the public/family health nurse; and laboratory supplies by the lab technician. It is yet unclear if districts have one overall logistics officer or “coordinator,” and if they do, who usually fills that position. Probe to find out how the parties who manage different types of supplies relate to one another and how coordination is achieved. Make sure respondent also identifies himself or herself if applicable.)

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C307 What are the logistics responsibilities of the parties identified in the preceding question? For example, what roles do they play in quantification and selection, receiving, storage, issuing and transport?

(Note : Probe for each type of commodity. Make sure respondent also describes his/her own role if applicable.)

C308 Have the roles and numbers of staff working on logistics for contraceptives, drugs, vaccines and lab supplies changed since the health reform program began?

Yes

No

If “yes,” what changes have taken place?

C309 Have the personnel mentioned above received any training on logistics management?

Yes No

If yes, what types of training have taken place? (Note: answer and then fill in table below)

If no, do you know why no personnel have received training?

(Note: At least three types of information transfers for logistics training aimed at district level staff have been provided since 1997. They include: Stores management, quantification and DILSAT. Stores management training has taken place for all districts. Orientation for quantification was provided for all districts at inter-district meetings. DILSAT training has been pilot tested in two districts only.

List the staff members who have received training.

Type of Training	Names and Positions of Trained Staff	Dates of Training/ Organizers of Training
Stores Management	1. 2. 3. 4. 5.	1. 2. 3. 4. 5.
Quantification	1. 2. 3. 4. 5.	1. 2. 3. 4. 5.

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C310 For the training that has taken place, has it been useful? What improvements has it brought? How could the training be improved?

(Note: Probe to find out if: Enough staff have been oriented; if orientation was effective in giving staff skills to do their jobs better; if training has been frequent enough; or if any follow up from the trainers has taken place.)

C311 Have district staff who have received training passed their new skills on to others, either at district or health facilities?

How many people have received training? _____ at districts

_____ at health facilities

(Note: For Stores management training, the intended plan was for the district staff who had been trained to train others, specifically, to train health facility staff in accordance with the manual. Probe to find out if this has been done, what district staff think of the results, and what problems were encountered. Ask to see documentation of training.)

C312 Is there a budget line item for “supervision” under the Planning Cost Center? If the answer is “yes,” how much is budgeted for the current year? Is there a schedule of regular supervisory visits for health facilities? How often do health centers receive supervisory visits?

(Note: The measures listed above are called for in the District Health Planning Guide. Probe to find out if they are in place. If answers are affirmative, ask to see documentation. If these measures are not in place, ask questions to find out why not.)

Budget line item for supervision exists: Yes [] No [] If not, do you know why not?

Amount budgeted for 1999 _____

Amount spent to date _____

Supervisory schedule exists: Yes [] No []

Frequency of supervisory visits to facilities _____

Who conducts supervisory visits? _____

What items are covered under supervision?

Quantification

C313 Have there been any changes in the way(s) the district plans its needs for contraceptives, drugs, vaccines or laboratory supplies since health sector reform began?

(Note: It is understood that decentralization and creation of the District Health Management Boards with responsibility for their own budgets is one of the fundamental changes introduced by the health reform program. Following the initial response, probe to find out how the respondent feels about this process: How well is this approach working; what have been the benefits; and what have been the problems?)

C314 Does the district have a “Planning Working Group” to quantify needs for contraceptives, drugs, vaccines and lab supplies?

Planning working group exists Yes [] No []

If “yes,” who leads this group, and who are the members?

(Note: According to the Manual on Quantification of Medical Supplies, such a group should be designated, headed by the manager planning and staffed by the pharmacy technician, lab technician and public health nurse. Probe to understand if such a group exists and who participates)

List the members – note the leader of the group first.

Name and Position	
1.	5.
2.	6
3.	7.
4.	8.

C315 Have any district staff attended orientation sessions on selection and quantification of medical supplies?

Staff have attended orientation on selection and quantification Yes [] No []

If “yes,” who has attended and what are their positions? When did they attend this orientation?

(Note: Orientation sessions, based on the *Manual for Quantification of Medical Supplies* have been given, but not all districts have been covered.)

List staff oriented in quantification.

Name and Position	Dates Oriented
1.	1.
2.	2.
3.	3.
4.	4.

C316 Is a copy of the *Manual on Quantification of Medical Supplies* available?

Quantification manual available Yes [] No []

Who has this document?

(Note: Verify that manual is present; ask to see it.)

C317 How are needs for contraceptives quantified? What steps are carried out? Can you describe what types of information are used and how the calculations are made? Is the method used in the *Manual* used?

(Note: The manual and other publications recommend that contraceptive needs be quantified using the consumption method. The steps are described on pages 23-28 of the manual and a sample spread sheet is given in Annex 4 of the manual. As noted above, there have been orientations for this. In fact, however, the method recommended in the manual has many steps, and may or may not have been followed. Find out what method was used, what information was used, and describe in detail.)

Stores Management

(Interviewer: “We would now like to examine the effects of the Health Reform program on the storage practices for contraceptive products and materials.”)

C318 Have there been any changes in stores management for contraceptives, drugs, vaccines and lab supplies at the district since the health reform program began? If there have been changes please describe them.

(Note: Record the answers given and probe to get the respondent’s opinion about whether any changes mentioned have been beneficial or non beneficial.)

C319 At the district level, are contraceptives, drugs, vaccines and laboratory supplies intended for reissue stored in the same place or are they stored separately? Are contraceptives stored together with drugs or other products? How many separate storage spaces are there? If supplies are stored separately, what is the reason?

(Note: For these questions, distinguish between products kept in “dispensing” areas and those kept in “storage” areas from which stock is reissued to the health facilities. The focus is on the latter. Multiple issue points suggest a less efficient distribution operation, although this may be caused by building configuration and availability of space, and not inattention of district staff. Probe to understand how the storage situation affects redistribution.)

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C320 (**Note** : this is an observation of the interviewer and not to be asked)

Characterize the quality of the storage area where contraceptives are kept.

#	Description	Yes	No	N/A
1	Store is separate from dispensing area			
2	Store structure is in good condition (i.e., no holes, cracks or signs of water damage)			
3	There is a ceiling in the store			
4	The ceiling is in good condition			
5	The store is tidy (i.e., no dust on shelves; floor is swept)			
6	Boxes are raised off the floor on pallets, boards or bricks			
7	Products are stored out of direct sunlight			
8	Damaged and/or expired products are separated from good products			
9	The storeroom is well-ventilated			
10	Products are separated by lots			
11	Products arranged according to First Expiry/First Out (FEFO)			

C321 Is there available a copy of the *Manual on Stores Procedures for District Stores*?
Who has this document?

(**Note:** Verify that the document is present; ask to see it.)

Stores Procedures Manual available Yes [] No []

C322 How often is a physical count carried out? _____

Is the record of the most recent account available?

(Note: If a report of physical count is available, ask to see it and record the date(s) on which it was performed.)

Record of physical count available? Yes [] No []

What is the date of the most recent physical count? _____ / _____ / _____

(Note: The following two questions are observations of the interviewer and not to be asked)

Is the stock control card adjusted to reflect physical counts? Yes [] No []

Are losses and adjustments reflected on the stock control card? Yes [] No []

C323 For shipments of contraceptives from the central level to the district, who decides the quantities of each item to be provided?

Center decides [] Push

District decides [] Pull

Please describe what information is used to determine quantities to ship/order:

(Note: Ask questions to ascertain if min/max levels are used. If so get details on how these levels are set.)

Does the system work as intended? [] Yes [] No

If not, why not?

If a pull system, do you always receive exactly what you order? [] Yes [] No

If not, do you know why?

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C324 For shipments of contraceptives from the district to individual health facilities, who decides the quantities of each item to be provided?

District decides Push

Health facility decides Pull

Please describe what information is used to determine quantities to ship/order:

(Note: Ask questions to ascertain if min/max levels are used. If so get details on how these levels are set.)

Does the system work as intended? Yes No

If not, why not?

If a pull system, do you always receive exactly what you order? Yes No

If not, do you know why?

C325 For the contraceptive products listed below, compare the amount shown in the Stock Control Cards with your own physical count.

(Note: This question has two purposes: The first is to verify the availability of contraceptive products; and the second is to verify the quality of stock record keeping. Concerning the second point, it is possible that you will find a situation where stock has recently been issued and not yet recorded on the stock record cards. In such cases, review the @@Supply Vouchers@@ and record the totals for all stock issued but not yet recorded on the cards in the second column and compute the corrected total. Note that space is given to record separate lots.)

NOTE : TABLE CONTINUES ONTO NEXT PAGE

Product	Unit	Stocked at this site? (Y/N)	Stock Control Card Count	Vouchers Count (Rec'd/Issued + or -)	Adjusted Count	Physical Count	Lot # and Expiration Date
Microgynon	Cycle/Strip						
Microlut	Cycle/Strip						
Noristerat	Vial						
Pregna	IUD						

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Product	Unit	Stocked at this site? (Y/N)	Stock Control Card Count	Vouchers Count (Rec'd/Issued + or -)	Adjusted Count	Physical Count	Lot # and Expiration Date
Neo Shampoo	Tube						
Condom	Condom						
Female condom	Condom						
PC4	Pack						
IUD insertion/ Removal kits	Kit						

Product	Unit	Stocked at this site? (Y/N)	Stock Control Card Count	Vouchers Count (Rec'd/Issued + or -)	Adjusted Count	Physical Count	Lot # and Expiration Date
Tubal-ligation Kits	Kit						
Tubal-ligation Consumable kits	Kit						
Fertility Thermometers	Thermo-meter						

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C326 Gather the data indicated below, which is required for computing stock positions. The “Total Units in Stock Now” is taken from the physical count column of the preceding table. The “Total Issued or Lost for Month” is taken from the Stock Record Book.

Product	Microgynon	Microlut	Noristerat	Pregna	Neo Sampooon	Condom	Female Condom	PC4
Unit	Cycle/Strip	Cycle/Strip	Vial	IUD	Tube	Condom	Condom	Pack
Units of Stock on Hand (Transfer from C325)								
Average Monthly Consumption (Compute using data below)								
Total Issued/ Lost for Month								
1999								
July								
June								
May								
April								
March								
February								
January								

Product	Microgynon	Microlut	Noristerat	Pregna	Neo Shampoo	Condom	Female Condom	PC4
Unit	Cycle/Strip	Cycle/Strip	Vial	IUD	Tube	Condom	Condom	Pack
1998								
December								
November								
October								
September								
August								

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C327 Have there been any stockouts of any contraceptives in the last six months? [] Yes [] No

(Note: Clarify that stockouts are defined as “total stockout” , i.e., zero stock on hand)

If yes, check stock control cards and note dates for each stockout by product on the table below. Note reasons for stockouts.

Product	Unit	Stocked at this site? (Y/N)	Beginning Date of Stockout	Ending Date of Stockout	Total number of days stocked out in last 6 months	Reason for Stockout
Microgynon	Cycle/Strip					
Microlut	Cycle/Strip					
Noristerat	Vial					
Pregna	IUD					
Neo Sampoo	Tube					
Condom	Condom					

Product	Unit	Stocked at this site? (Y/N)	Beginning Date of Stockout	Ending Date of Stockout	Total number of days stocked out in last 6 months	Reason for Stockout
Female condom	Condom					
PC4	Pack					
IUD insertion/ Removal kits	Kit					
Tubal-ligation Kits	Kit					
Tubal-ligation Consumable kits	Kit					
Fertility Thermometers	Thermo- meter					

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Transport

(Interviewer: "Now we would like to talk about the transport systems.")

C328 For how many clinical facilities and community-based workers is the district responsible for supplying?

Type	Number
Hospitals	
Health Centers	
Community Based Distributors	
Community Health Workers	
Other	

C329 How many vehicles does the district have?

	Make	Type	Year	Who Owns the Vehicle?	Is it operational ? (Y/N)
1.					
2.					
3.					
4.					
5.					
6.					

C330 Center and district: For regular operations, does the center deliver to the district, or does the district pick up from the center? What is the frequency of deliveries or pick ups (e.g., monthly, quarterly)?

Center delivers to district [] District picks up from center []

Frequency: _____ Frequency: _____

Reason: _____ Reason : _____

(Note : *If both, note the cases in which center delivers to district and cases in which district delivers to center*)

If there is another arrangement, explain what it is.

C331 District to health center: For regular operations, does the district deliver to the health centers, or do the health centers pick up from the district? What is the frequency of deliveries or pick ups (e.g., monthly, quarterly)?

District delivers to health centers [] Health centers pick up from district []

Frequency: _____ Frequency: _____

Reason: _____ Reason : _____

(Note : *If both, note the cases in which center delivers to district and cases in which district delivers to center*)

If there is another arrangement, explain what it is.

Zambia: Implications of Health Sector Reform for Contraceptive Logistics

C332 Are contraceptives transported together with drugs, vaccines and laboratory supplies or transported separately?

Together [] Separately []

C333 (**Note:** *If contraceptive transport is integrated with other health products, ask the following question.*)

When supplies are delivered to health facilities, what products have priority? Are there occasions when the vehicle is full? If so, what happens?

(**Note:** *Probe to find out which products are left behind; then probe specifically for contraceptives.*)

C334 Does the District Board ever use commercial transport services for obtaining goods from the center or delivering them to health facilities? Can you describe the commercial transport arrangements? When did this arrangement begin? How has the use of commercial vehicles changed the efficiency and/or effectiveness of distribution? Is there a budget for this?

Use commercial transport Yes [] No []

Budget line for transport? Yes [] No []

C335 The CBOH has a facility to assist districts with the purchase of vehicles with funds set aside from district resources. Also, some districts have set up investment accounts and purchased vehicles from the revenues of these accounts. Has this district ever used either of these mechanisms to acquire a vehicle?

(Note: Depending on the answer, probe to better understand the following: Do the respondents consider these to be really viable options; if these mechanisms have never been considered, why not; if these mechanisms have been used, has the experience been satisfactory? What problems have been encountered?)

CBOH vehicle purchase facility used Yes [] No []

Investment account purchase Yes [] No []

IV. Indirect Effects on Contraceptive Logistics

(Note: Tell the respondents that at this point we would like to change the subject from logistics to Family Planning Services. Make sure that the interviewees include staff who provide services.)

C401 How has the Health Reform program affected the delivery of family planning services? What benefits or problems has it brought?

(Note: There are many possible answers to this question, but four developments are possible topics: One is the increase in the method mix from two to 12 products; another is the integration of reproductive health and family planning services; another is that intended training for family planning service providers generally has not taken place; and a fourth is any reductions or transfers of staff that might be associated with the reforms.)

C402 Has the range of family planning services changed? [] Yes [] No

If “Yes,” how has it changed?

(Note: This question concerns a topic that may be covered in responses to the first question.)

C403 Have the responsibilities of Family Planning services staff changed?

(Note: This question also concerns a topic that may be covered by the first question. A possible topic for discussion would be changes in work loads.)

C404 In your opinion, have there been any changes in numbers of family planning clients since the health reform program began? If the answer is “Yes,” what factors explain this?

(Note: Confirming the validity of respondents’ impressions is beyond the scope of this study. At this point, we are interested in hearing their opinions. If they do feel changes in numbers of acceptors has occurred, ask them how they know this or what information do they base their impressions on?)

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C405 If the data are available, record for the years 1997 and 1998 the numbers of family planning *New Acceptors* and *Revisits*, by month. Annotate this data to explain what health facilities it represents and how it has been aggregated.

(Note: These data are not being collected for purposes of tracking long term trends; rather, they are being collected to compare short term trends around known events in 1997 and 1998, such as “delinkage” and depletion of drug stocks at EDMSS.)

1997

Month	New Acceptors	Revisits
January		
February		
March		
April		
May		
June		
July		
August		
September		
October		
November		
December		

1998

Month	New Acceptors	Revisits
January		
February		
March		
April		
May		
June		
July		
August		
September		
October		
November		
December		

John Snow, Incorporated
Family Planning Logistics Management Project

Implications of Integration and Other Elements
of Health Sector Reform for Family Planning Logistics

Instrument D : Health Facility Questionnaire

Date ___/___/___ Form # N/S _____ Interviewer _____ District _____

Respondent Information

Title : _____ Qualification : _____

Length of time in current position : _____ years _____ months

Health Facility : _____

Topics Covered in this Interview

- [] I. Health and Family Planning Services
- [] II. Health Sector Reform
- [] III. Direct Effects of Health Sector Reform on Contraceptive Logistics
- [] IV. Indirect Effects of Health Sector Reform on Contraceptive Logistics

Notes (Follow-up questions, other contacts):

Interview
Start Time _____

Interview
End Time _____

(Note: Thank respondent for taking time to meet with us. State who we are and explain the objective of the study. Explain that we wish to ask questions about the services provided by the facility and how the supply system functions.)

I. Health and Family Planning Services

D101 What health and family planning services do you offer at this facility?

(Note: Probe for the following services.)

- Family Planning
- Immunization
- STD/HIV
- Other Primary Health Care Services

D102 In your opinion, what are the most important issues or problems facing the services offered ?

(Note: Probe for each type of service mentioned in D101. Obtain at least one issue per type of service offered, if possible. For each issue identified, probe to discover details. E.g., transport may be functional but unavailable to those who need to use it.)

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D103 How would you describe the supply situation for contraceptives, essential drugs and vaccines? Are there enough of these supplies? Are there any supply problems that affect service delivery?

(Note: Ask for each product category separately, and record the answers for each one. Include syringes and needles for injectable items.)

II. Health Sector Reforms

(Interviewer: " In recent years, Zambia has implemented an extensive program of Health Reform. We would like to begin by briefly discussing your impressions.)

C201 How have the reforms affected work within this [hospital or health center]?

(Note: This open-ended question is intended to get at general effects of any changes that have taken place. It sets the stage for the more focused questions that follow on indirect and direct effects on contraceptive logistics. Be prepared to prompt responses for the points listed below.)

- Division of MOH into MOH and CBOH
- Decentralization and creation of District Health Management Teams
- Integration of Health and Family Planning Services
- Integration of Logistics Services
- Cost Sharing
- HMIS and /or FAMS
- Other Health Reform related training activities

III. Direct Effects of Health Sector Reform on Contraceptive Logistics

C301 For regular operations, does the center deliver to the district, or does the district pick up from the center? What is the frequency of deliveries or pick ups (monthly, quarterly)?

Center delivers to district [] District picks up from center []

Frequency:_____ Frequency:_____

Reason:_____ Reason:_____

If there is another arrangement, explain what it is.

D302 Have there been any stockouts of any contraceptives in the last six months? [] Yes [] No

(Note : Clarify that stockouts are defined as “total stockout” , i.e., zero stock on hand)

If yes, check stock control cards and note dates for each stockout by product on the table below. Note reasons for stockouts.

Product	Unit	Stocked at this site? (Y/N)	Beginning Date of Stockout	Ending Date of Stockout	Total number of days stocked out in last 6 months	Reason for Stockout
Microgynon	Cycle/Strip					
Microlut	Cycle/Strip					
Noristerat	Vial					
Pregna	IUD					
Neo Sampooon	Tube					

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Product	Unit	Stocked at this site? (Y/N)	Beginning Date of Stockout	Ending Date of Stockout	Total number of days stocked out in last 6 months	Reason for Stockout
Condom	Condom					
Female condom	Condom					
PC4	Pack					
IUD insertion/ Removal kits	Kit					
Tubal-ligation Kits	Kit					
Tubal-ligation Consumable kits	Kit					
Fertility Thermometers	Thermo- meter					

D303 Has the stock situation, that is, availability of contraceptives changed in recent years? In your view, what are the reasons for these changes?

D304 Have the personnel mentioned above received an training to logistics management?

Yes No

If yes, what types of training have taken place? (Note : answer and then fill in table below)

(Note: In principle, district staff were to have received training in stores management and in turn trained health facility staff.)

List the staff members who have received training.

Names and Positions Of Staff Trained	Dates of Training
1.	1.
2.	2.
3.	3.
4.	4.

If no, do you know why no personnel have received training?

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D305 Does this facility receive supervisory visits from district level staff? If the answer is “Yes,” what does the supervision cover? Do the supervisors check up on the status of contraceptive supplies and stores management?

District makes supervisory visits Yes [] No []

Supervisor checks up on contraceptive supplies Yes [] No []

Date of last supervisory visit _____

D306 Characterize the quality of the storage area where contraceptives are kept.

#	Description	Yes	No	N/A
1	Store is separate from dispensing area			
2	Store structure is in good condition (i.e., no holes, cracks or signs of water damage)			
3	There is a ceiling in the store			
4	The ceiling is in good condition			
5	The store is tidy (i.e., no dust on shelves; floor is swept)			
6	Boxes are raised off the floor on pallets, boards or bricks			
7	Products are stored out of direct sunlight			
8	Damaged and/or expired products are separated from good products			
9	The storeroom is well-ventilated			
10	Products are separated by lots			
11	Products arranged according to First Expiry/First Out (FEFO)			

D307 Is there available a copy of the Manual on Stores Procedures for Health Centers?

Who has this document?

(Note: Verify that the document is present; ask to see it.)

Stores Procedures Manual available Yes [] No []

D308 How often is a physical count carried out? _____

Is the record of the most recent account available?

(Note: If a report of physical count is available, ask to see it and record the date(s) on which it was performed.)

Record of physical count available ? Yes [] No []

What is the date of the most recent physical count? _____ / _____ / _____

(Note : The following two questions are observations of the interviewer and not to be asked)

Is the stock control card adjusted to reflect physical counts? Yes [] No []

Are losses and adjustments reflected on the stock control card? Yes [] No []

D309 When it is time to receive new stocks of contraceptives, who decided how much the health center needs?

The District decides [] (Push)

The Health Center decides [] (Pull)

Please describe what information is used to determine quantities.

(Note: Ask questions to ascertain if min/max levels are used. If so, get information on how these levels are set.)

Zambia: Implications of Health Sector Reform for Contraceptive Logistics

D310 For the contraceptive products listed below, compare the amount shown in the Stock Control Cards with your own physical count.

(Note: This question has two purposes: The first is to verify the availability of contraceptive products; and the Second is to verify the quality of stock record keeping. Concerning the second point, it is possible that you will find a situation where stock has recently been issued and not yet recorded on the stock record cards. In such cases, review the @@Supply Vouchers@@ and record the totals for all stock issued but not yet recorded on the cards in the second column and compute the corrected total.)

Product	Unit	Stocked at this site? (Y/N)	Stock Control Card Count	Vouchers Count (Rec'd/Issued + or -)	Adjusted Count	Physical Count	Lot # and Expiration Date
Microgynon	Cycle/Strip						
Microlut	Cycle/Strip						
Noristerat	Vial						

Product	Unit	Stocked at this site? (Y/N)	Stock Control Card Count	Vouchers Count (Rec'd/Issued + or -)	Adjusted Count	Physical Count	Lot # and Expiration Date
Pregna	IUD						
Neo Shampoo	Tube						
Condom	Condom						
Female condom	Condom						
PC4	Pack						

Zambia: Implications of Health Sector Reform for Contraceptive Logistics

Product	Unit	Stocked at this site? (Y/N)	Stock Control Card Count	Vouchers Count (Rec'd/Issued + or -)	Adjusted Count	Physical Count	Lot # and Expiration Date
IUD insertion/ Removal kits	Kit						
Tubal-ligation Kits	Kit						
Tubal-ligation Consumable kits	Kit						
Fertility Thermometers	Thermo- meter						

D311 Gather the data indicated below, which is required for computing stock positions. The “Total Units in Stock Now” is taken from the physical count column of the preceding table. The “Total Issued or Lost for Month” is taken from the Stock Record Book.

Product	Microgynon	Microlut	Noristerat	Pregna	Neo Sampooon	Condom	Female Condom	PC4
Unit	Cycle/Strip	Cycle/Strip	Vial	IUD	Tube	Condom	Condom	Pack
Units of Stock on Hand (Transfer from C325)								
Average Monthly Consumption(Compute using data below)								

Total Issued/ Lost for Month

1999								
July								
June								
May								
April								
March								
February								
January								

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Product	Microgynon	Microlut	Noristerat	Pregna	Neo Sampooon	Condom	Female Condom	PC4
Unit	Cycle/Strip	Cycle/Strip	Vial	IUD	Tube	Condom	Condom	Pack
1998								
December								
November								
October								
September								
August								

D312 Is this facility responsible for supplying contraceptives to any other facilities or to CHWs/CBDs?

Type	Number
Hospitals	
Health Centers	
Community Based Distributors	
Community Health Workers	
Other	

D313 How many vehicles does the health center have?

Make	Type	Year	Who Owns the Vehicle?	Is it operational? (Y/N)
1.				
2.				
3.				
4.				
5.				
6.				

What role do they play in pick up or delivery of contraceptives?

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D314 For regular operations, does the district deliver to the health centers, or do the health centers pick up from the district?

District delivers to health centers [] Health centers pick up from district []

Frequency _____

Reason: _____

If there is another arrangement, explain what it is.

IV. Indirect Effects on Contraceptive Logistics.

(Note: Tell the respondents that at this point we would like to change the subject from logistics to Family Planning Services. Make sure that the interviewees include staff who provide services.)

D401 How has the Health Reform program affected the delivery of family planning services? What benefits or problems has it brought.

(Note: There are many possible answers to this question, but four developments are possible topics: One is the increase in the method mix from two to 12 products; Another is the integration of Reproductive Health and Family Planning services; Another is that intended training for Family Planning service providers generally has not taken place; and a fourth is any reductions or transfers of staff that might be associated with the reforms.)

D402 Has the range of family planning services changed? If the answer is “Yes,” how has it changed?

(Note: This question concerns a topic that may be covered in responses to the first question.) D403 Have the responsibilities of Family Planning services staff changed?

(Note: This question also concerns a topic that may be covered by the first question. A possible topic for discussion would be changes in work loads.)

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D404 In your opinion, have there been any changes in numbers of Family Planning clients as a result of the Health Reform program? If the answer is “Yes,” what factors explain this?

(Note: Confirming the validity of respondents’ impressions is beyond the scope of this study. At this point, we are interested in hearing their opinions. If they do feel changes in numbers of acceptors has occurred, ask them how they know this or what information do they base their impressions on?)

D405 If the data are available, record for the years 1997 and 1998, the numbers of Family Planning *New Acceptors* and *Revisits*, by month. Annotate this data to explain what health facilities and community based workers it represents and how it has been aggregated.

(Note: These data are not being collected for purposes of tracking long term trends; rather, they are being collected to compare short term trends around known events in 1997 and 1998, such as “delinkage” and depletion of drug stocks at EDMSS.)

1997

Month	New Acceptors	Revisits
January		
February		
March		
April		
May		
June		
July		
August		
September		
October		
November		
December		

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1998

Month	New Acceptors	Revisits
January		
February		
March		
April		
May		
June		
July		
August		
September		
October		
November		
December		

Appendix B
Financial Estimates for Contraceptives and
Drugs

Zambia: Implications of Health Sector Reform for Contraceptive Logistics

Table B-1. Zambia: Estimated Overall Expenditures for Contraceptives in USD

Source	Description	1995	1996	1997	1998	1999
DFID	Condoms, Female condoms, VFTs, Orals, Noristerat, PC4, and IUDs	563,112	1,424,732	1,544,082	2,571,691	662,313
USAID	Condoms, Female condoms, VFTs, Orals, Norplant, Depo, and IUDs	1,099,272	255,477	520,620	589,028	237,791
CIDA					53,655	
Total		1,662,384	1,680,209	2,064,702	3,214,374	900,104
Population		9,095,000	9,397,000	9,712,000	10,036,000	10,554,000
Contraceptive Expenditures Per Capita in USD		00.18	0.18	0.21	0.32	0.09

Data compiled by FPLM, Lusaka 1999.
Work in Progress: Some figures not validated.

Table B-2. Zambia: Estimated Overall Expenditures for Drugs, Lab Supplies, and Medical Supplies in USD

Source	Description	1995	1996	1997	1998	1999
GRZ	Bulk essential drugs Emergency procurements of essential and TB drugs	6,000,000	6,000,000 3,300,000		2,700,000	500,000
World Bank	Bulk essential drugs and medical supplies			3,600,000	2,400,000	
DGIS	RHC and CHW kits	2,500,000		2,500,000	3,000,000	3,000,000
SIDA	RHC and CHW kits + bulk essential drugs for RHCs		2,500,000			
CIDA	Bulk essential drugs		1,838,235	1,838,235	1,677,852	1,655,629
IrishAid	Laboratory supplies					427,324
NORAD	Urban health kits		2,000,000			
Total		8,500,000	15,638,235	7,938,235	9,777,852	5,582,953
Population		9,095,000	9,397,000	9,712,000	10,036,000	10,554,000
Contraceptive Expenditures Per Capita in USD		0.93	1.66	0.82	0.97	0.53

Data compiled by FPLM, Lusaka 1999.
Work in progress: Some figures not validated.

Table B-3. Kabompo: Selected Resource Inputs in Kwacha

	1995		1996		1997		1998		1999	
	Units	Value	Units	Value	Units	Value	Units	Value	Units	Value
CBOH Decentralized Funds for Drugs, Lab Supplies, and Expendable Medical Supplies										
Amount Budgeted (1)										
Amount Remitted to MSL Account				30,186,539		34,566,022		61,381,135		56,160,154
Amount Spent										
District Grant for Operating Costs										
Amount Proposed (2)		246,546,000		205,546,000		326,753,007		271,319,237		215,670,000
Amount Remitted		108,707,403		148,439,973		182,338,574		182,299,587		99,218,191
Total Amount Spent		123,771,424		142,646,987		170,786,206		191,053,000		93,760,589
Amount Spent for Drugs, etc.		833,620		3,428,809		1,839,960		27,000		18,000
Urban, Rural, and Community Drug Kits										
Rural Kits Planned (3)	108		108		108		108		108	
Rural Kits Shipped	108		108	56,433,888	99	56,242,494	54	43,426,940	45	44,879,940
Community Kits Planned	300		300		300		300		300	
Community Kits Shipped	300		300	18,421,2000	100	6,675,900	300	28,350,900	150	17,579,700
Population										
Value of Drugs etc. Allocated, Spent, or Shipped in USD per capita				66,422		68,627		70,905		73,260
				1.36		1.11		1.01		0.70

1) CBOH Decentralized Funds for stock issued from MSL are made up of monies provided by GRZ, World Bank Credits, CIDA and Irish Aid. At the planning stage, separate budgets are not made up for each district. Rather, once the total amount available from all sources is known, allocations are made to each district based on population. Therefore, in this category of funds, the only figures that may be provided are for amount allocated.

2) Exclusive of personnel and emoluments, and centrally funded drugs, contraceptives, lab supplies, and expendable medical supplies

3) In 1998, Rural Kits were out of stock in May, June, July, August, September, and November because SIDA withheld funds. In 1999, Rural Kits ran out in June and are expected to remain out of stock until shipments funded by DGIS are scheduled to arrive.

Data compiled by FPLM, Lusaka 1999.

Work in progress: Some figures were not validated.

Zambia: Implications of Health Sector Reform for Contraceptive Logistics

Table B-4. Mongu: Selected Resource Inputs in Kwacha

	1995		1996		1997		1998		1999	
	Units	Value	Units	Value	Units	Value	Units	Value	Units	Value
CBOH Decentralized Funds for Drugs, Lab Supplies, and Expendable Medical Supplies										
Amount Budgeted (1)										
Amount Remitted to MSL Account				60,818,088		69,641,616		123,667,152		152,040,027
Amount Spent										
District Grant for Operating Costs										
Amount Proposed (2)		258,283,048		254,353,632		538,781,251		695,139,953		652,679,689
Amount Remitted		81,988,764		210,794,228		285,636,661		396,687,478		168,209,231
Total Amount Spent		74,821,201		211,848,610		281,775,465		389,944,452		152,782,327
Amount Spent for Drugs, etc.		0		0		1,722,500		5,081,114		3,371,700
Urban, Rural, and Community Drug Kits										
Rural Kits Planned (3)	384		384		384		384		384	
Rural Kits Shipped	384		384	173,376,000	352	181,542,592	192	146,935,488	160	159,573,120
Community Kits Planned	360		360		360		540		540	
Community Kits Shipped	360		360	19,071,360	120	7,225,680	540	49,030,380	270	31,643,460
Population				176,434		179,342		185,463		189,507
Value of Drugs etc. Allocated, Spent, or Shipped in USD per capita				1.19		1.10		0.94		0.80

- 1) CBOH Decentralized Funds for stock issued from MSL are made up of monies provided by GRZ, World Bank Credits, CIDA and Irish Aid. At the planning stage, separate budgets are not made up for each district. Rather, once the total amount available from all sources is known, allocations are made to each district based on population. Therefore, in this category of funds, the only figures that may be provided are for amount allocated.
- 2) Exclusive of personnel and emoluments, and centrally funded drugs, contraceptives, lab supplies, and expendable medical supplies
- 3) In 1998, Rural Kits were out of stock in May, June, July, August, September, and November because SIDA withheld funds. In 1999, Rural Kits ran out in June and are expected to remain out of stock until shipments funded by DGIS are scheduled to arrive.

Data compiled by FPLM, Lusaka 1999.

Work in progress: Some figures were not validated.

Table B-5. Solwezi: Selected Resource Inputs in Kwacha

	1995		1996		1997		1998		1999	
	Units	Value	Units	Value	Units	Value	Units	Value	Units	Value
CBOH Decentralized Funds for Drugs, Lab Supplies, and Expendable Medical Supplies										
Amount Budgeted (1)										
Amount Remitted to MSL Account				53,809,174		61,615,844		109,415,267		147,725,094
Amount Spent										
District Grant for Operating Costs										
Amount Proposed (2)		166,773,116		411,594,130		522,511,694		607,624,000		607,624,000
Amount Remitted		96,186,040		169,078,559		304,704,460		383,721,291		180,735,926
Total Amount Spent		75,921,208		138,336,375		335,413,534		342,589,000		192,511,792
Amount Spent for Drugs, etc.		2,394,924		300,080		9,154,505		9,691,128		2,369,000
Urban, Rural, and Community Drug Kits										
Rural Kits Planned (3)	372		372		372		372		372	
Rural Kits Shipped	372		372	167,958,000	341	175,869,386	186	142,343,754	155	154,586,460
Community Kits Planned	210		210		210		255		300	
Community Kits Shipped	210		210	11,124,960	100	6,021,400	255	23,153,235	150	17,579,700
Population				169,844		175,896		184,408		192,304
Value of Drugs etc. Allocated, Spent, or Shipped in USD per capita				1.14		1.10		0.83		0.73

- 1) CBOH Decentralized Funds for stock issued from MSL are made up of monies provided by GRZ, World Bank Credits, CIDA and Irish Aid. At the planning stage, separate budgets are not made up for each district. Rather, once the total amount available from all sources is known, allocations are made to each district based on population. Therefore, in this category of funds, the only figures that may be provided are for amount allocated.
- 2) Exclusive of personnel and emoluments, and centrally funded drugs, contraceptives, lab supplies, and expendable medical supplies
- 3) In 1998, Rural Kits were out of stock in May, June, July, August, September, and November because SIDA withheld funds. In 1999, Rural Kits ran out in June and are expected to remain out of stock until shipments funded by DGIS are scheduled to arrive.

Data compiled by FPLM, Lusaka 1999.

Work in progress: Some figures were not validated.

Appendix C

Forms used for Contraceptive Logistics

111

REPUBLIC OF ZAMBIA
 MANKWALA DISTRICT
 FAMILY PLANNING SERVICE MONTHLY ACTIVITY RECORD

Total No. of Health Facilities: 111
 No. Facilities providing FP: 111
 No. of Facilities reporting: 111

Completed: NAME: J Muvugachile POSITION: RHN
 HEALTH FACILITY: ALL HEALTH INSTITUTIONS
 DISTRICT: MANKWALA

month: JAN TO JUNE year: 1999

BRAND/METHOD Type/Brand	UNIT OF measure	BALANCE FROM PREVIOUS MONTH	SUPPLIES ORDERED	SUPPLIES RECEIVED THIS MONTH	TOTAL AVAILABLE (2+4)	QUANTITIES ISSUED		TOTAL ISSUED 6A+6B	STOCK BALANCE	NO. OF ACCEPTOR		REMARKS
						UNITS USED 6(A)	TRANSFERR / RECEIVED 6 (B)			NEW	CONTINUE	
MICROGYNON	CYCLE	NIL		5280 MCH 5280 PAK	210520	4416	-	4416	6104	538	934	5280000000
EUGYNON	"											
REGYNON PC4	"	650	-	0	650	3	0	3	647	03	00	
NORDETTE	"											
MICROVAL	"											
LOFEMININ	"			10000 2400 MCH 2400 PAK	210000 3000	0	0	0	110	00	00	
MICROVAL	"	3000		6000 MCH 6000 PAK		465	0	465	2535	74	81	
CONDOMS NIALC	PIECE	11708		160 MCH 800 PAK	23708	5160	10000 TO 5000 TO	15160	8548	70	59	
FOAMING TABLETS NB	TABLETS	0		160 MCH 800 PAK	240 Tubs	180	-	180	60	05	07	100 Tubs received
COPPER T380 A	LOOP	0	50	0	0	0		0	0	00	00	
FOAMS (specify)	CAN	0										
DIAPHRAGM	PIECE	0		70 MCH	70	0		0	70	00	00	
JELLIES (specify)	TUBE	0										
NPF NO. 1, 2, 3, 4, 5	KIT	50	800	900 MCH 400 PAK	680	591		591	93	905	1457	400 Vials

Grand Totals: 2362

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