

**Memorandum**

Date . September 20, 1985

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Subject Foreign Trip Report (AID/RSSA): Evaluation Report—Maternal-Child Health/Family Planning (MCH/FP) Commodity Management Needs Assessment and Feedback/Design Workshop—Kenya, August 1-24, 1985.

To James O. Mason, M.D., Dr.P.H.
Director, CDC
Through: Assistant Director for Science, CHPE *JM*

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SUMMARY

At the invitation of the Ministry of Health (MOH) of Kenya and the U.S. Agency for International Development (USAID/Kenya), and in collaboration with the Eastern and Southern Management Institute (ESAMI), Dr. Dalmat and Mr. McConnon assisted in conducting a Maternal-Child Health/Family Planning (MCH/FP) Commodity Needs Assessment followed by a Feedback and Design Workshop in Kenya.

Twelve representatives from the Kenyan Ministry of Health, ESAMI, and CDC were divided into three field teams. Together, the teams made 42 site visits in 12 districts representing a cross-section of Kenya's districts and ethno-ecological zones. Of these sites, 11 were district or regional storerooms, 7 hospital MCH/FP clinics, 8 MOH health centers or dispensaries, 5 community-based distribution programs, 3 industrial clinics, 2 church-supported clinics, and 4 Family Planning Association of Kenya (FPAK) clinics.

We found supply imbalances at all levels of the health system: clinics, district stores, and the central warehouse, whether private or public. For example, six of eight MOH health centers or dispensaries visited were completely out of stock of at least one contraceptive while five of eight were out of at least one of five essential preventive or curative MCH drugs. While some service delivery points were low on specific vaccines, there were no stockouts encountered.

All nonhospital service delivery points (SDPs) are required to use prepackaged, standard order kits in requisitioning contraceptives and drugs. In using this system, SDPs tend to order new kits when they run low on fast-moving items. As a result, SDPs have ended up stockpiling slow-moving commodities. These commodities differ by zone of the country. For example, chloroquine is stockpiled in the highlands and is in short supply in the coastal areas. Variations in contraceptive usage and stockpiling are not regional in nature but are believed to be related to provider preference and rumor, and vary by SDP within districts. For example, within Embu District, a very active dispensary relied primarily on IUDs whereas a health center 7 kilometers away provided primarily oral contraceptives.

We found that stockpiling in several instances would likely result in the expiration and potential deterioration of commodities. In Murang'a District, we found 1,016 months of Neogynon in supply. In Baringo District, we found 460 months of Neogynon and 285 months of Microgynon in stock. Ironically, in neighboring Embu District, Microgynon is the fastest moving oral contraceptive and is in short supply (0.4 months supply). Unfortunately, district health managers have the misconceptions that (1) they need national authorization to transfer commodities to another district, and (2) they are not allowed to issue non-kit, open stock to SDPs that are not hospitals. In fact, as contraceptives are donated, they can be transferred without authorization as long as a record of the transfer is kept. In addition, SDPs should be encouraged to order supplementary stock in addition to kits for those items that are fastest moving. In this way, they can avoid much of the stockpiling. However, based on prekit system performance, SDPs are reluctant to order open stock because they fear that their chances of getting what they need from the district hospital store are better by requisitioning an entire kit. The proposed system of recordkeeping, forecasting, and requisitioning with justification should alleviate these problems.

The stock control system mandated by the Kenyan Government for all Ministries is a sound system which could be used, by and large, as it is to track the consumption of contraceptives and other MCH drugs and to provide a factual basis for requisitioning additional supplies. However, average monthly consumption is calculated only at the end of the year using the system as it exists. For the purposes of drug management, this is sufficient. However, as there is evidence that the demand for contraceptives is continuously increasing in Kenya, annual adjustments of average monthly issues or consumption would eventually lead to inadequate supply levels. Instead, we recommend quarterly recalculations so that forecasts of supply requirements will reflect changes in demand for specific contraceptives. In addition, the current requisition form does not require a justification of the supplies requested. While we do not recommend changing the form, we recommend that unused columns be used to justify quantities requisitioned for each commodity by reporting specific facts : current balance and average monthly consumption. We found documented evidence in Kilifi District that when requisitions are justified, central medical stores or other national supply units respect the quantities requested pending availability of stock.

The daily register and monthly summary forms, that have been successfully used in Ghana and Nigeria for tracking contraceptive users and contraceptives dispensed, were reviewed and accepted with modifications that make the forms appropriate to Kenya. These forms will serve as the basis for the evaluation of program buildup, staffing changes, and commodity management once they have been adopted.

ESAMI, with CDC assistance provided as needed and available, will train a core of Kenyans who will be responsible for implementing commodity management and information systems in Arusha, Tanzania, at the ESAMI campus. During this training program, participants will not only master technical skills but will also acquire training skills. In addition, the Kenyans will develop a plan for national implementation of changes. They will take this plan back to the MOH for approval. Once approved, the team will pilot-test the introduction of changes in three to four districts. Within each district, district health managers will themselves be trained in the use of new practices, forms, and data as well to train SDP staff. A cluster approach to training will be used at the local level. Staff from three to five SDPs will be trained in one of their health centers to use the new forms and procedures for commodity management and performance tracking. This training will be done on the job and will take from 1 to 2 days. Immediately after training, the trainers will visit each SDP that participated in the training to ensure that staff members are practicing what they have learned. Where they detect problems, they will provide immediate assistance to overcome them. After this process has been completed with one cluster, the team of trainers will move on to another cluster, repeating the process until the entire district has implemented the indicated changes. The national team of trainers will work with one district team at a time, helping each to get started in one or two clusters before moving on.

The MOH has already sketched out the type of organizational unit that will be responsible for implementing commodity management and service statistics

changes. However, the individuals to be seconded to this unit remain to be named.

ESAMI will assist the MOH in repeating the factfinding exercise that we completed during the needs assessment on a more in-depth basis in those districts that are chosen for the pilot demonstration. Once this exercise has been completed, recommendations will be formulated as to the future of the kit system as it applies to contraceptives. This phase of the work will precede the training of the national core team. In discussion with ESAMI, the MOH, and USAID/Kenya, it was decided that ESAMI can assist the MOH in carrying out the in-depth needs assessment within pilot districts without CDC assistance. This is a clear indication that we are succeeding in creating the institutional capability within Africa, specifically at ESAMI, to do commodity management improvement work.

I. PLACES, DATES, AND PURPOSE OF TRAVEL

Kenya, August 1-24, 1985, at the request of USAID/Kenya, AID/Regional Economic Development Support Office (REDSO), and the Kenyan Ministry of Health, to (1) assist in completing an MCH/FP commodity needs assessment in collaboration with the MOH and ESAMI, and (2) to conduct a feedback and design workshop upon completion of the needs assessment to share the findings and to begin designing solutions to commodity management and service.

II. PRINCIPAL CONTACTS

A. USAID

1. Dr. Gary Merritt, Sector Chief, Health, Population, and Nutrition, USAID/Kenya
2. Ms. Laura Slobey, Population Officer, USAID/Kenya
3. Ms. Barbara Kennedy, Population Officer, REDSO/East and Southern Africa

B. Ministry of Health (MOH)

1. Dr. S. Kanani, Assistant Director of Medical Services
2. Dr. J. Kigodu, Director, Department of Family Health
3. Dr. C. Thube, Health Planner
4. Mrs. R. Waithaka, Assistant Director of Nursing
5. Mr. Matibo, Chief Supplies Officer, Central Medical Stores (CMS)
6. Esther Kiragu, Senior Nursing Officer, I/C of Quality Control, CMS

C. Eastern and Southern African Management Institute (ESAMI)

1. Mr. L. Ndungu, Director, Health Unit
2. Dr. J. Katarobo, Director, Training Unit
3. Mr. D. Onyango, Consultant, Health Unit

D. Other

1. Family Planning Private Sector (FPPS) Program
 - a. Eric Krystall
 - b. Millicent Odera
 - c. Joan Robertson

- H'

2. Maendeleo Ya Wanawake
Jennifer J. Mukolwe, Programme Manager (MCH/FP)
3. Christian Organizations Research Advisory Trust (CORAT)
Dr. Gordon Brown
4. Family Planning International Assistance (FPIA)
Andrew Franklin
5. Family Planning Association of Kenya (FPAK)
Gilbert M. Magiri, Research and Evaluation Officer
6. Protestant Churches Medical Association (PCMA)
Sellah Nakhisa, Nurse Coordinator

III. BACKGROUND AND OBJECTIVES

The population growth rate of Kenya is 4 percent (1980) with a total fertility rate of 8.0 (1979). The proportion of the population under age 14 is over 50 percent; dramatic increases in the size of the population are already guaranteed by the age structure of the population. The needs and demands in Kenya for food, water, health care, jobs, schools, housing, and energy have compounded continuously at a rate between 3.0-4.0 percent per year during the past 30 years, outrunning the ability of the Government to keep pace. While Kenyans still debate the maximum carrying capacity of the nation's land and resources, very few oppose the need for a dramatic increase in participation in voluntary family planning, childspacing, a reduction in the total fertility rate, and a slow-down in the rate of growth of the population.

In December of 1983, there were a total of 634 service delivery points providing family planning services throughout the country. Between 1977 and 1984, the proportion of married women of reproductive age that reported practicing some method of fertility control increased from 6.7 percent to 12 percent, based on the preliminary findings of the 1984 National Contraceptive Prevalence Survey and previous national surveys. Based on a series of studies, USAID/Kenya has concluded, other donor organizations have agreed, and the Director of the MOH's Division of Family Health acknowledge that:

1. family planning services are not yet a priority for most service delivery point providers of care, and many do not even offer this service routinely;
2. most service delivery points have limited service hours during the week;
3. shortages of contraceptives are common, and
4. family planning clients frequently must wait for long periods of time when they seek services at service delivery points.

AID (REDSO/East and South Africa) had initiated a new program in 1984 to (1) improve the management, forecasting, and availability of contraceptives in eastern and southern African countries, and (2) to develop the institutional capacity within an African organization to produce these improvements. ESAMI was selected as the implementing organization and has been working in collaboration with CDC (Division of Reproductive Health) since that time. ESAMI first

proposed a contraceptive improvement program to the Kenyan MOH and USAID/Kenya in the last quarter of 1984. Formal communications began in June of 1985 to initiate such an activity. The Kenyan MOH, ESAMI, and CDC collaboratively undertook the first phase of this improvement program in August 1985--the Maternal-Child Health/Family Planning Commodity Management Needs Assessment-- which is the subject of this report.

The objectives of the Needs Assessment and the Feedback/Design Workshop that followed were to:

1. Standardize commodity management and service statistics procedures so as to.....
 - a. avoid running out of supplies in service delivery points;
 - b. be able to make reasonable forecasts of contraceptive requirements at the SDP, district, and national levels;
 - c. provide a uniform basis for evaluating program coverage based on service statistics and the quantities of contraceptives dispensed.
2. Design a system that can work in all organizational settings (i.e., MOH, church-supported, industrial, and community-based SDPs).
3. Design a system that is compatible with the kit approach to the distribution of basic drugs and contraceptives that is currently being refined.
4. Develop a system that will be durable, i.e., accommodate the future flow and stress that can be anticipated as family planning services become more popular.
5. Establish a preliminary plan for implementing proposed changes.

IV. METHODOLOGY

A. Steps Followed During the Assessment

The process employed involved the following steps:

1. The ESAMI and CDC collaborators came to agreement on the objectives of the assessment with Drs. Kanani, Assistant Director of Medical Services, and Kigundu, Director of the Department of Family Health (responsible for family planning). In the process, it was made clear that the assessment should not focus entirely on contraceptives, but that it should also include basic MCH drugs and vaccines.
2. In the same meetings, we discussed criteria for the selection of districts that should be visited as part of the needs assessment. Drs. Kanani and Kigundu selected the districts visited.

3. ESAMI and CDC advisors developed two data collection instruments for use in collecting information from SDPs and district and central supply depots or warehouses (copies can be obtained from ESAMI or CDC). After corrections were made based on the review of a number of MOH officials, three teams composed of MOH, ESAMI, and CDC representatives field-tested the data collection instruments in or near Nairobi.

Further corrections were made and procedural lessons learned were shared.

4. A schedule of site visits was made, the MOH communicated with officials in each of the districts to be visited to confirm the schedule, and the three teams went out and completed the field work. Due to time limitations and circumstances, not all data were collected for each site visited.
5. Upon return to Nairobi, the MOH members of the team spent 3 days tabulating the results of the field work and preparing presentations for the Feedback/Design Workshop. ESAMI and CDC collaborators structured the analysis, reviewed findings with MOH colleagues, and assisted them in preparing their presentations.
6. The MOH organized a 1-1/2-day Feedback/Design Workshop. During the workshop, MOH team members presented findings, and ESAMI/CDC colleagues presented relevant recommendations and facilitated a critical discussion-review of the recommendations. During the workshop, a general plan for implementing proposed changes was blocked out. An organizational home and framework for pursuing commodity and service statistics improvements were also proposed by MOH officials attending the workshop.

B. Team Composition

Each of the three teams was led by an ESAMI advisor and, in the case of two of the teams, a CDC advisor. Each team was composed of four members.

Team 1: Linus Ndungu, Director, Health Management Unit, ESAMI
Rosalind E. W. Waithaka, MCH/FP Nurse Coordinator, MOH
Anthony N. Kamau, Statistical Officer, Division of Family Health, MOH
A. O. Ofwette, Trainer/Clinical Officer, Division of Family Health,
MOH

Team 2: James Katarobo, Director, Training Unit, ESAMI
Patrick J. McConnon, Division of Reproductive Health, CDC
Samuel N. Ongayo, Economist, MOH
Nicholas Jefwa Ngombo, Research Statistician, Division of Family
Health, MOH

Team 3: Deryck Onyango-Omuodo, Consultant, Health Management Unit, ESAMI
Michael E. Dalmat, Division of Reproductive Health, CDC
Charles K. Thube, Economist, MOH
Catheryn Lwenya, Equipment Procurement Officer, MOH

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C. Selection of Districts and Sites Visited

Prior to the evaluation visits, Drs. Kanani and Kigundu had suggested at a provisional list of districts to be visited as part of the field work: Nyeri, Murang'a, Embu, Kitui, Kakamoga, Kisumu, South Nyanza, Kilifi, Nandi, and Baringo. These districts were selected because they represent:

1. geographic areas with large population concentrations;
2. different ethnic, ecological zones of the country;
3. districts within which a cross-section of organizations are providing family planning services;
4. districts that have a complete range of health facilities offering family planning services;
5. the best and worst examples of SDPs; and
6. districts with "high" and "low" consumption of family planning.

After our arrival, the ESAMI and CDC counterparts suggested that the selection criteria be altered slightly to focus on districts and sites where management was strongest. In this way, we expected to identify commodity management practices that were effective and could enhance the recommendations to be made at the end of the field work.

In consultation with representatives of the different organizations that provide family planning services in Kenya, the specific national and district stores and SDPs to be visited were identified, and a schedule of site visits was prepared. As it turned out, the 3 teams visited 42 sites in 12 of the county's 40 districts found in 6 of 7 provinces (plus Nairobi). The final list of districts represented included:

Central Province

Kirinyaga
Murang'a
Nyeri

Coast Province

Kilifi
Kwale
Mombasa

Eastern Province

Embu
Meru

Nyanza Province

Kisumu

Rift Valley Province

Nakuru
Baringo

Western Province

Kakamoga

NAIROBI

The sites visited can be divided into three categories: stores (national and district level), SDPs (run by the MOH and a variety of other organizations), and community-based programs. The specific places visited during the field work include:

Stores

1. Central Medical Stores (1)
2. IPPF/FPAK Stores (1)
3. District Stores (11):
 - 3.1 Mombasa Municipal (Provincial Medical Office)
 - 3.2 Mombasa Provincial (Provincial General Hospital)
 - 3.3 Kilifi District (Hospital)
 - 3.4 Kwale District (Msambweni Health Centre)
 - 3.5 Embu District (Hospital)
 - 3.6 Murang'a District (Hospital)
 - 3.7 Nyeri District (Hospital)
 - 3.8 Nakuru District/Province (Hospital)
 - 3.9 Baringo District (Health Centre)
 - 3.10 Kakamoga District (Health Centre)
 - 3.11 Kisumu District/Province (Hospital)

Service Delivery Points (SDPs)

1. MOH:
 - 1.1 Hospital MCH/FP Clinics (7)
 - a. Kenyatta National Hospital FP Clinic
 - b. Mombasa Provincial General Hospital
 - c. Nyeri Provincial General Hospital
 - d. Murang'a Hospital
 - e. Baringo Hospital
 - f. Kakamoga Hospital
 - g. Kwale "Msambweni"
 - 1.2 Other SDPs (8)
 - a. Kilifi - Vipingo Rural Demonstration Health Centre
 - b. Embu - Runyenjes Rural Health Centre
- the Nemburi Dispensary
 - c. Murang'a - Kangema Rural Health Centre
 - d. Kisumu - Nyahera Rural Health Centre
 - e. Meru - Kirieni Dispensary
 - f. Kwale - Tiwi Rural Demonstration Health Centre
 - g. Nairobi - Kariobangi
2. Private SDPs:
 - 2.1 FPAK (4)
 - a. Mombasa
 - b. Nyeri
 - c. Kakamoga
 - d. Nairobi
 - 2.2 Protestant Churches Medical Association (PCMA) (2)
 - a. Kaimosi Health Centre
 - b. Kikuyu Hospital

- 2.3 Family Planning Private Sector (FPPS) (3)
 - a. Cashewnuts, Ltd.
 - b. Fluorspar Industries, Ltd.
 - c. PanAfrican Paper, Ltd.

C. Community-Based Programs (5)

1. Meru - Chogoria PCMA
2. Kirinyaga Christian Community Services
3. Mombasa - Mikomani (Shaani) Urban CBD (Family Planning International Assistance [FPIA])
4. Murang'a - Kandara Maendaleo Ya Wanawake
5. Kakamoga - Emuhaya Maendaleo Ya Wanawake

V. COMMODITY MANAGEMENT

A. Description of the Supply Line

To a large extent, the MOH has elected to (1) centralize the distribution of contraceptives, drugs, and vaccines, much of which is obtained as donations from international organizations, and (2) to standardize the brands of contraceptives that are acquired.

1. Distribution

There are only three sources of contraceptive supplies in Kenya today: (1) the private pharmaceutical companies that supply private pharmacies; (2) the MOH which supplies its own SDPs and those operated by FPAK and every other organization offering family planning services in Kenya; and (3) FPAK which receives a few products from IPPF/London for use in its own clinics.

a. Contraceptives and Basic Drugs

As depicted in Figure 1, the MOH supplies contraceptives and basic drugs to all hospitals, health centers, dispensaries, and other SDPs within its network through the district level. Therefore, there are three levels to the MOH system: the central medical stores, the district depot (usually located within the district hospital), and the SDP.

The SDPs supported by churches, FPIA, Maendeleo Ya Wanawake, private industry, FPAK, and other organizations receive their contraceptives and drug kits directly from the central medical stores, bypassing the district level. All reported a total lack of confidence in their ability to obtain resupplies on a timely and accurate basis if they worked through district depots.

FPAK supplies a limited number of contraceptives and other materials obtained from IPPF/London to its clinics directly from its central depot. On an exceptional basis, FPAK clinics loan supplies to non-FPAK clinics. However, there is no pattern of a steady supply of these clinics with FPAK products.

b. Vaccines

As shown in Figure 1, vaccines are distributed through a parallel three-level system by the Kenyan Expanded Immunization Programme (KEPI)--from the National Public Health Laboratory Stores, to district hospitals, to other SDPs. In some instances, the National Laboratory delivers directly to an SDP, bypassing the district depot.

Recommendation

We recommend that the pattern of distribution of all commodities ultimately be channeled through the district level to all SDPs, independent of the organization that supports them (see Figure 2). However, we feel strongly that this should not be done until the other commodity management recommendations made within this report be implemented. In summary, the MOH district management system should first earn the confidence of its clients through improvement in performance. It is likely that this will occur sooner in some districts than in others. Criteria for the conversion of the flow of commodities should be developed in consultation with ESAMI.

B. Standardization of Commodities

While several types and brands of oral contraceptives had been acquired in the past, the MOH has narrowed the selection that can be used in Kenya to Microgynon, Eugynon, and a progestin-only mini pill (soon to become available in Kenya). Currently, the other types of contraceptives available nationally include the NeoSampoon foaming tablet, Esai condoms, Noristerat, and Depo-Provera injectables, the Copper-T, Lippes Loop (being phased out), the Copper-7 (being phased out), and three products that are little used--diaphragms, jellies, and creams.

Recommendation

We strongly support the MOH's policy to keep the number of items included within the supply system to a minimum. It is outside of the scope of this evaluation to make specific recommendations about which contraceptives to include as the main product lines. However, we caution the MOH to hold a planning session together with all major donors of family planning support (e.g., SIDA, DANIDA, the World Bank, AID) in order to (1) project future requirements, and (2) to ascertain which organizations are in a position to "guarantee" a long-term supply of each type of contraceptive in adequate quantities. This could help to avoid a situation in which sources dry up and, in the process of converting from one brand to another, the MOH ends up increasing (not decreasing) the number of products distributed. Converting from one brand to another can be disruptive to program clients.

C. Supply Adjustments Within and Between Districts

Contraceptives and drugs are prepackaged in kits designed to serve the needs of health centers and (a separate kit for) dispensaries (see Section V.C. for further discussion). Kits are issued to districts specifically for individual SDPs. They are not supposed to be opened until they are issued by the district depot to the corresponding SDPs. Open stock is supposed to be provided to district depots (upon request) to supplement the distribution of kits. None of the districts visited aggregate SDP requirements and project open stock requirements for the entire district. Most SDPs are unaware that they are allowed to order open stock. Consequently, SDPs order only kits, and the quantities of less popular commodities mount. None of the SDPs visited transfer oversupplied or dead stock back to the district depot. Only one of the districts visited (Kilifi) reported occasionally informally trading or transshipping items that are in oversupply at the district level to other districts.

Recommendation

As part of future management in-service training provided to district health teams, we recommend training these professionals to (1) aggregate SDP requirements for kits and for open stock of contraceptives and basic drugs, and (2) to prepare requisitions that incorporate both sets of requirements. We also recommend that correct procedures, including bookkeeping, be determined for transfers, both within and between districts, and that these procedures be incorporated within the in-service training for district health teams. After district health teams have been trained, we recommend that they turn around and train the staff of SDPs in these same techniques.

D. Adequacy of Supplies

For contraceptives, basic drugs, and vaccines, the three teams analyzed the data available in stores (commodities issued) and SDPs (commodities dispensed or estimates of commodities dispensed based on issues) for approximately a 6-month period. We then calculated the average quantities of the products dispensed per month. By dividing this number into the total quantities in inventory, we were able to estimate the number of months of supply on hand. Based on international experience, confirmed by ESAMI and Kenyan counterparts with years of commodity management experience in Kenya, we recommend that the following guidelines be used in determining the number of months supply to be kept on hand at the following levels.

<u>Level of Supply System</u>	<u>Minimum Level*</u>	<u>Maximum Level</u>
Central level	18 months	24 months
District store	6 months	12 months
SDPs	3 months	12 months
CBD stores	9 months	12 months
Community distributor	2 months	4 months

*These supply levels should be adjusted to reflect the lead time typically needed by the facility in question to send a requisition and to receive the order requested.

While we recognize that these guidelines may sometimes not be applicable, they do offer a rough gauge of the adequacy of supplies in inventory.

1. Contraceptives

a. Expiration Dates

Among all of the contraceptives in inventory at the Central Medical Store, only two products had clearly identifiable dates of production or expiration--the Nova-T and Depo-Provera. None of the oral contraceptives, condoms, or foaming tablets had dates marked on the shipping containers, inner boxes/cartons, or on the packets. This is despite the fact that the Division of Family Health sent cables of inquiry to manufacturers citing lot numbers, was able to ascertain dates of manufacture, and sent out a circular to all stores and SDPs dated May 26, 1983. The contraceptives shipped to district hospitals for their own use come from this inventory and continue to be unmarked. Until these items are clearly marked, there is no way to tell which products have already expired prior to receipt.

The contraceptives in the kits are also not marked with expiration dates. Given that all of the SDPs had a significant buildup of at least one contraceptive, at best this suggests that there will be a lot of product that is already in the supply line that will expire, if it hasn't already.

In summary, the estimates of quantities of contraceptives on hand is probably an overstatement of the amount that is usable. Nonetheless, these estimates of months supply on hand are a good indicator of how well commodities are being managed.

Recommendation

We recommend that the MOH (1) sort through both bulk stock and kits by batch number; (2) identify stock that has expired and dispose of it according to regulations; (3) clearly mark all viable product both on the shipping containers for accurate stock rotation in depots and on inner containers/boxes for redistribution to SDPs (this should be done at the Central Medical Stores); and (4) identify stock that has a shelf-life of less than 18 months, and take it to districts, substituting it for expired product that is in inventory at district stores.

The MOH should be as careful with contraceptives as it is in its quality control procedures for other drugs; no contraceptives should be allowed to leave the Central Medical Stores without a clearly marked date of expiration that is viable. At the same time, shipments to districts should not be held up until the entire stock of all products has been examined, sorted out, and remarked. A viable, e.g., 6-month supply of each contraceptive should be identified within the shortest amount of time possible and be used for distribution to districts before the major effort of sorting out the balance of inventory of the different commodities takes place.

Once viable stock is available at the district level, the MOH has an ethical obligation and programmatic mandate to instruct district health teams to substitute viable district stocks for already expired SDP supplies that are identifiable by batch number. If these steps are not taken, the family planning program in Kenya can expect numerous "method failures," potentially snowballing client discontinuation, and major distortions in the types of contraceptives accepted by clients. District health teams should take advantage of any supervisory visit to each SDP to exchange stock.

b. Central Medical Stores

If a significant proportion of the Microgynon stock is viable, there appears to be an adequate supply (19 months at prevailing rates of issues). Microgynon is the fastest moving pill in Kenya. In addition, a healthy supply of Eugynon (35 months) is in inventory (see Table 1). Ovulen, which is no longer promoted by the MOH, is dead stock (5,390 months supply). Nova-Ts are in good supply (10 months) while the popular Copper-T is out of stock as are the Lippes Loops C and D (neither of which is currently promoted by the MOH). The supplies of Depo-Provera, which is growing in popularity, is in short supply (less than 2 months supply on hand). There are 11 months of condoms in stock. Reportedly, the condoms in stock are too small--52 mm condoms are needed.

Recommendation

The MOH should dispose of the Ovulen in stock, either by selling the viable stock to the private sector at a mutually attractive price, gifting it to some other country, or by destroying it. It is just taking up valuable space in the warehouse as it is not being promoted by the MOH.

As quickly as possible, estimates of the proportions of current inventory that are still viable should be made. Forecasts should be made for the next 24 months, and the donor request or procurement process should be initiated. In our judgment, as much as 50 percent of the product in inventory may have already expired, in which case the CMS would be in short supply of all contraceptives.

c. District Stores

We found that four districts were out of contraceptive kits, the main source of contraceptives for SDPs (see Table 1). In contrast, Baringo had a 94-month supply of kits.

One district (Embu) was practically out of Microgynon, which represents as much as 70 percent of the pills dispensed in some Embu SDPs. Mombasa had only 1.7-months supply on hand of Microgynon. This method is in adequate supply in Nyeri, Nakuru, and Kakamoga. It is in oversupply in Murang'a (50-months supply) and in Baringo (2,849-months supply).

While in adequate supply in five districts, Eugynon (the second mainstay oral contraceptive) is in oversupply in Murang'a (197-months supply) and Nakuru (104-months supply).

Neogynon is in both small supply and demand in all districts visited other than Murang'a (1,016-months supply) and Baringo (460-months). Ovulen is not in stock in any of the district stores visited.

The Nova-T and Copper-T are out of stock in Mombasa, Nakuru, and Kakamoga where they are reportedly popular. The Nova-T is in oversupply in Murang'a (59-months). By contrast, there is reportedly little demand for the Copper-T in Embu, Nyeri, and Baringo. The Lippes Loop are reportedly used when others are not available; generally speaking, they are in low demand and are either in low supply or oversupplied relative to demand.

Papo-Provera, while it is not out of stock, is uniformly in very low supply, ranging from 1.0- to 2.9-months of supply at the district stores level.

Other than in Kakamoga (1.5-months supply), NeoSampoon is in adequate supply ranging from 5.3 to 38 months of supply at the district level.

Recommendation

We recommend that district health teams inspect the contraceptives in stock and, using the circular dated May 26, 1983, which lists dates of expiration, determine how much of the stock is still viable. Once this has been done, expired stock should be removed and disposed of according to regulations. New calculations of months-supply on hand should be made, and requisitions should

be prepared and submitted taking into consideration a large enough buffer stock so that SDPs supplied by the district stores can be resupplied as expired stocks are swapped out.

Once each district has sorted out its internal viable supply/demand situation, if districts still have gross oversupplies of specific contraceptives, they should be transferred to another district in need before the products expire.

d. MOH Service Delivery Points

Unfortunately, data were only analyzed and reported by the three teams for five of the MOH SDPs visited. While the Kenyatta Hospital MCH/FP clinic is not supposed to receive contraceptive kits, the other SDPs visited are. All were out of stock of kits (See Table 1). Only one SDP had an adequate supply of Microgynon (Kenyatta) while three SDPs were undersupplied, and one was oversupplied (Nemburi with 30-months supply). Eugynon was undersupplied in Kariobangi (0.8-months supply), adequately supplied in Kangema, and in oversupply at Kenyatta (27-months), Nemburi (236-months), and Runyenjes (298 months). Neogynon and Ovulen aren't really a factor in the SDPs visited. Other than in Kariobangi (10-month supply), the Nova-T was either in very short supply or out of stock. While Kenyatta had a 1-month supply of Copper-Ts, this method was out of supply in all other SDPs. The Lippes C was in oversupply in Runyenjes (33-months) and in undersupply 15 kilometers down the road at Nemburi (0.4 months). Kangema had an adequate supply of the C and the two other SDPs were out of stock. Almost an identical pattern was found for the Lippes D. Other than at Kenyatta (4.2-month supply), Depo-Provera was either close to or out of stock in the other SDPs. Foaming tablets were in adequate supply at Kenyatta and Runyenjes were oversupplied in Kangema (95-months) and in Kariobangi (17-months) and were out of stock in Nemburi.

Recommendation

We were repeatedly told by SDP staff that no systematic approach is used to forecast contraceptive requirements. There was also strong evidence to support the assertions of staff that the kit system resulted in an undersupply of fast-moving contraceptives and an oversupply of slow items. The kit system should be re-evaluated with respect to contraceptives. At this point in time, we are not in a position to make more specific recommendations as we feel that the same methods used during this assessment should be applied to more SDPs within districts where MOH/ESAMI/CDC will pilot commodity management changes. ESAMI should be called upon to assist with the re-evaluation of the kit system after the October Planning Workshop in Arusha, but before intensive work begins in pilot districts.

e. Other Service Delivery Points

FPAK clinics maintained approximately a 2-year supply of oral contraceptives (see Table 1). They were all in short supply of Copper-Ts, reportedly the most popular IUD (ranging from nil stock to a 2-month supply). The Nova-T was in ample supply in Mombasa, in short supply in Nyeri, and was not turning over in Kakamoga.

There was a 1-year supply of Lippes C and D in Mombasa, less than a 2-month supply in Nyeri, and dead stock in Kakamoga. Depo-Provera was either out of stock or in very short supply in the three clinics visited. Mombasa had an

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oversupply of foaming tablets, Nyeri had an adequate supply, and Kakamoga was almost out of stock. Condoms were in short supply in each of the clinics. These clinics are resupplied through the issue of open stock.

The Family Planning Private Sector (FPPS) supported industrial clinics are issued contraceptive kits. (Other commodities are purchased by the companies for their dispensaries.) The Cashewnut Factory Clinic makes most use of Microgynon, of which it had a 2-month supply on hand, and the Copper-T (which was out of stock). It was well supplied with Eugynon (13-month supply) and Depo-Provera (11-month supply). However, foaming tablets and condoms were in gross oversupply (144 and 174 months of supply respectively). The clinic has no way of altering the standard issue kit to eliminate foaming tablets or condoms from its composition. Instead of returning the excesses of stock, the clinic continues to accumulate these commodities.

In contrast, the FPPS-supported clinic at Fluorspar dispenses the condom most widely (5-month supply), along with the IUD (out of stock of both the Nova-T and Copper-T). The slower moving items include orals (Microgynon, 33-month supply; Eugynon, 34-month supply) and the Lippes C and D (a 41-month supply). There is an abundant supply of foaming tablets (21 months) and no movement in Depo-Provera.

The FPPS-supported PanAfrican Paper clinic dispenses primarily three products: Microgynon (3-month supply), Eugynon (2-month supply), and condoms (2-month supply). The slow moving products that are accumulating include the Copper-T (150-month supply), Lippes C (160-month supply), Lippes D (62-month supply), and Depo-Provera (78-months supply). The Nova-T and foaming tablets are in adequate supply (16 months and 10 months respectively).

The PCMA-supported Kaimosi (urban) Health Center and Kikuyu Hospital are not issued kits--instead they are issued open stock. Both are out of Nova-Ts and Copper-Ts, while Kaimosi is out of foaming tablets while Kikuyu is out of Depo-Provera. Microgynon, Eugynon, and Depo-Provera are adequately supplied at Kaimosi. Eugynon is oversupplied at Kikuyu (72 months), while Lippes C and D are adequately supplied and foaming tablets and condoms are undersupplied.

Recommendations

The kit system seems to result in gross oversupply of little used commodities. SDPs seem to key their reordering on the most used commodities. While a few items were found to be out of stock, fewer were at zero-balance in clinics that depended on kits than in clinics that received open stock. The commodities most commonly dispensed seemed to vary by SDP, even within districts. With the data we collected, it would be very difficult to generalize about regional preferences for specific commodities. In fact, unlike the case with drugs, in our judgment, further investigation of contraceptive consumption patterns within pilot districts will prove that fast-moving contraceptives are highly variable. This complicates the use of kits. If the kit system is to continue to be used for contraceptives, perhaps alternative types of kits might be needed. For instance:

Kit 1--Heavy Microgynon, moderate Eugynon, light Ts, heavy foaming tablets, heavy condoms, moderate Depo-Provera

Kit 2--Light Microgynon, moderate Eugynon, heavy Ts, moderate foaming tablets and condoms, moderate Depo-Provera

Etc.

Alternatively:

1. kits could be modified slightly, continued to be used, but also be supplemented with open stocks of the most popular contraceptives;
2. commodity-specific kits, each with a standard issue, could be put together, be ordered in multiples as needed, and could serve as the basis for ordering contraceptives;
3. kits could be used only for drugs and open stock issues would be made as is true of vaccines.

In our opinion, it is premature to make a specific recommendations. Instead, we recommend that the supply and dispensing patterns of SDPs be examined using the same methods employed during this assessment by the MOH with ESAMI assistance following the Arusha training program in each of the pilot districts. A sample of SDPs should be randomly selected within each district for examination. In this way, findings can be generalized to the rest of the SDPs in the districts, and potentially, their provinces.

e. CBD Stores

Approximately a third of the CBD stores visited receive only open stock issues, a third receive only contraceptive kits, and a third receive a mix of kits and open stock. In the Mikomani urban CBD program, other than condoms (9-month supply), all other fast-moving products were out of supply--Microgynon, Eugynon, foaming tablets, and Depo-Provera (See Table 1). Perhaps this dire situation has been the result of a recent change over from Noriday and Norminest to Microgynon and Eugynon. Since IUDs are not inserted by community workers, they are stockpiling. The orals are in good supply in the Kirinyaga, Kandara, and Kakamoga CBD stores, while IUDs are in nil stock--perhaps this is due to the fact that IUDs have not been ordered or have been transferred to clinic-based programs. Microgynon, a popular method in Meru, was almost out of stock in the PCMA-supported CBD program. Depo-Provera was in adequate supply in Meru and Kakamoga, but was out of stock in the other three stores. Foaming tablets were out of stock in Kakamoga and Mikomani, were in short supply in Kandara, were in adequate supply in Meru, and were in oversupply in Kirinyaga (41 months). Condoms, on the other hand, were in short supply in Kandara and Kakamoga, but were in adequate supply in the three other stores. We suspect that the CBD programs are keying their resupply requisitions on condoms and Microgynon, but are having more difficulty keeping an adequate supply of Microgynon. Other variations appear to be the result of differences in local method preferences and program policies.

Recommendations

We are only able to visit a handful of CBD workers to ascertain the adequacy of supplies at their level. Generally, they seem to be resupplied by field supervisors on a monthly basis, pending access to their supervisors.

Essentially, we found no buffer stock built into what was issued to CBD workers. We recommend that this approach to supplying community workers be changed. Since the numbers of cycles of pills, pieces of condoms, and foaming tablets issued to, and dispensed by CBD workers are so small, if there is a sudden demand by three or four new acceptors, the CBD workers can easily run out of supplies. It is important to issue them with a buffer stock as well, and help them maintain the buffer. The specific approach to doing this must be looked into in greater detail than time permitted our team. However, we have developed some rough drafts of forms that can be used by CBD supervisors to "forecast" distributors requirements and to issue them a buffer stock.

None of the CBD storekeepers were forecasting the aggregate requirements of the network of CBD workers they serve. A simple algorithm needs to be developed and tested for the storekeepers use. In fact, during our trip, we developed a draft of such a method. All of the storekeepers seemed quite able to make use of such a forecasting algorithm if it were accepted.

2. Basic Drugs:

The teams were asked to assess the adequacy of five basic drugs: chloroquine, mintezol, ferrous sulfate, penicillin, and aspirin (see Table 2). Within district stores, we found that mintezol (a deworming drug) was commonly not stocked or was out of stock as in Kilifi and Embu. This drug was only in oversupply at one district store--Nyeri (30 months). Chloroquine was in short supply in Mombasa (2 months) while up coast in Kilifi, another area with endemic malaria, the drug was in adequate supply (8 months). In Kakamoga (a malarious district within the western part of the country), chloroquine was in short supply (1 month). The highland districts of Embu and Nakuru had adequate supplies of chloroquine while Nyeri had an oversupply (20 months). Ferrous sulphate was in short supply in three districts (Mombasa, Nakuru, and Kakamoga), was in adequate supply in Nyeri (8 months), as was in oversupply in Embu. Penicillin was in adequate supply in three districts and was almost out of stock in Kakamoga. Aspirin was found to be in short supply in three districts while it was in adequate supply in three other districts.

Information about drug supplies were only collected and reported by the three teams from five MCH SDPs. As shown in Table 2, chloroquine was in oversupply in Kangema Rural Health Center (30 months) while it was in short supply in three other SDPs. Other than Nyahera Health Center, mintezol was in adequate supply ranging from 6 to 8 months of supply. Ferrous sulphate was out of stock at Kariobangi Clinic, was in oversupply in Runyenjes Health Center (22 months), and was in adequate supply in two other clinics. Penicillin was out of stock in one SDP, was in inadequate supply in two SDPs, and was in adequate supply only in Kangema Rural Health Center. Aspirin was in short supply in two different SDPs.

Neither the PCMA nor the FPPS-supported clinics kept records about these common drugs. This was also true of three of the CBD programs which do not include drug distribution within their programs. Kirinyaga, which does distribute basic drugs through community volunteers, had an adequate supply of all drugs. The Mkomani program was in short supply of all drugs.

Recommendations

We were repeatedly told by health centers located in close proximity to the district or regional store that when they were running low of a certain drug, they would send someone in on an ad hoc basis to walk the requisition through and obtain their commodities the same day. Nobody we spoke with who works in an SDP forecasts commodity requirements. A simple approach inherent in some of the logistics forms proposed by CDC during the Feedback/Design workshop can be adopted to assist staff in projecting their requirements. We recommend that this technique and practice become part of the routine work of all SDP and district storemen.

The number of SDPs visited were entirely too few to be able to draw important conclusions about the drug kits. However, we do know that the Drug Management Unit of the MOH is currently reexamining the composition of the drug kits. We recommend that in addition to further modification of the drug kits to more accurately reflect the regional demands/needs for medicine, that the Unit consider some approach to (1) supplementing kit orders with open stock orders and (2) a simple method for transferring little used and oversupplied drugs in exchange for budgetary credit as necessary.

It is important to document here what was reported to us in our site visits-- that the availability of drugs in the stores is influencing the way in which health services are offered. The following are two specific cases that were explained to us:

1. Chloroquine, like aspirin, is a fast-moving product in this coastal area. Soon after a new shipment of drugs is received, the chloroquine is dispensed for both curative purposes as well as preventive; it is given to pregnant women. A week to 10 days later, supplies generally begin running low, and the clinical officer begins to prescribe chloroquine for acute cases of suspected malaria only and stops offering it prophylactically to pregnant women.
2. Ferrous sulphate is generally given to anemic patients as well as to pregnant and lactating women. When the drug begins to run low, the clinic officer stops giving it to pregnant and lactating women, unless they suspect that they are anemic, and is given only to anemic individuals.

In summary, instead of concentrating on maintaining an adequate minimum supply of basic drugs, and reordering immediately once the drugs reach these levels, clinic staff are adjusting the way in which the drugs are used, usually at the expense of preventive care. More emphasis should be given during in-service training of all cadres of SDP workers to inventory control, minimum and maximum supply levels based on normal consumption, and reordering. This could help to standardize the quality of care offered.

3. Vaccines:

The general pattern of vaccine distribution that we encountered, particularly at the SDP level, was that relatively small quantities of vaccines were given out on a frequent basis. Unlike the situation with drugs and contraceptives, we found no district stores or SDPs, whether private or MOH, that were out of

stock of the three vaccines that we examined: BCG, measles, and polio (see Table 3). Months of supply on hand were calculated taking reported waste into consideration.

Among the district stores visited, only Murang'a was oversupplied (BCG 17 months, measles 32 months). Baringo and Kakamoga were well supplied, while each of the other district stores had an undersupply of at least one of the three vaccines.

Only one of the SDPs had 3 or more months supply on hand of all three vaccines, Vipingo (MOH). The Mikomani Clinic, from which the CBD program emanates (private), also had 3 or more months supply available. All of the others were running low of at least two of the three vaccines. Tiwi was almost out of the three vaccines.

Recommendations

The Kenyan Expanded Programme of Immunization (KEPI) is doing an effective job of resupplying district stores and SDPs from what we saw, particularly in comparison with the distribution of drugs and contraceptives. The efficiency of their operation could be improved if they began to resupply using a minimum-maximum approach to estimating requirements to supplement the population-based estimates currently employed.

The statements made above about vaccine distribution and adequacy need to be tempered with the following caution. In Kilifi District, we learned that the District Public Health Nurse, faced with shortages of polio vaccine, instructed the nurses in her district to make the quantities available last by (1) giving first doses only, (2) leaving second and third doses until another time when vaccine was available in adequate supply. Therefore, while we calculate 4.2 months of polio vaccine on hand at Kilifi, this is an overstatement since the figure was based on a policy of dispensing in response to the scarcity of the vaccine.

E. Stock Control

An extensive system of forms for commodity management had been established for use by all Government of Kenya agencies for a number of years. Two of these forms provide the basis for stock control for MOH facilities:

S3 - Stores Ledger and Stock Control Card (see Figure 3)

By law, this daily or weekly summary of commodity activity and running balance of current inventory must be used by the Central Medical Stores, district stores, and hospitals. The advantage of this ledger card is that it provides space for the storekeeper (1) to tally the total quantities issued or dispensed during each month; (2) to average the monthly consumption at the end of the year; (3) to estimate buffer stock requirements; and to (4) estimate reorder quantities.

The formatting of this ledger card to accomplish the four functions outlined above is particularly practical for the management of drugs as the consumption of drugs is somewhat more predictable than that of contraceptives in a country whose family planning program is beginning

to expand. Using the same ledger card without having to reprint it, storekeepers could be taught to calculate monthly consumption averages on a quarterly basis and to estimate reorder quantities quarterly (or more frequently)--for contraceptives, these changes in use would be important as they would reflect change over time for the demand of each contraceptive.

S5--Bin Card (Standard Format)

The bin card was designed, and is used to be kept on the shelf in the storeroom together with the product being controlled. Quantities received and issued or dispensed are entered as the transactions occur. No modifications are needed on this card. Storekeepers find this card easy to use. Where both the S5 and S3 are used, at the end of the day, or week, the total quantities received or issued/dispensed are totalled from the S5 and recorded on the S3.

In private programs, or where the S5 is not available, storekeepers have designed their own running balance cards or sheets which all included the same information as the S5. The important function of all the S5-type forms is to track the running consumption of products as well as receipts.

The following discussion pertains to both contraceptives and drugs. As shown in Table 3, the Central Medical Stores (CMS) uses this ledger card and the bin card. The IPPF/FPAK Store, a private organization, uses a similar ledger card and bin card. At the district level, four of six district stores use the ledger card and five use the bin card. Only one of four district hospitals uses the ledger and bin cards. Since the facilities mentioned above are required by law to use the ledger card, two district stores and three district hospitals are out of compliance. Among the six MOH SDPs for which we obtained information, none use the ledger or bin cards whereas three of four FPAK clinics use the ledger card and none use the bin card. Of the two PCMA clinics visited, neither uses a ledger card and one uses a bin card. One of the three industrial clinics uses the bin card and none use the ledger card. Of the five CBD stores, three use ledger cards (or comparable) and two use bin cards.

KEPI has instituted the use of a simple balance sheet much like the S5 (Ledger Tally Sheet, see Figure 4) in all health facilities, stores and SDPs. We found that this form was universally well understood. It was utilized in all facilities for tracking vaccine consumption, but was only kept up-to-date in 80 percent of the places visited.

Recommendations

Commodity management training will be needed at all levels of the health system, not just to introduce modifications or new systems, but also to ensure that the most basic system of commodity management, stock control, is used. Very few health facility people with whom we met understood the relationship between stock control and forecasting commodity requirements. This concept is critical--if storekeepers and nurses feel comfortable with it, they will begin to want to control their inventory.

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From a legal standpoint, those facilities out of compliance with the use of the S3 should be brought into compliance. From a practical perspective, we recommend the following (see Figure 5);

1. Minimum and maximum stock levels be established for each product in each facility through the use of a simple algorithm and draw-down data. The minimum and maximum levels should be written down on the S3 (if required) and the S5. In this way, as storekeepers approach the minimum level they can estimate quantities to reorder and submit their requisitions on a timely basis.
2. The bin card (S5) or a simplified balance sheet should be used by all stores, SDPs, and CBD stores and supervisors. This is the basis for knowing what is on hand and what is needed.
3. Physical inventories should be conducted approximately twice a year in stores and at least once a year in SDPs. These inventories are the only practical means of confirming that a facility actually has what it thinks it has (i.e., what is recorded on the S3 or S5). It is advisable that SDPs do a physical inventory when preparing each major requisition--this will assist in justifying the quantities requested.
4. If copies of the S5 are not available, we recommend use of the KEPI stock control sheet for inventory control. These are abundantly available in all facilities visited in large quantities--in fact, many health workers use the reverse side of the KEPI form as note paper.

F. Requisitioning and Issuing Commodities

Two forms are used for requisitioning and issuing commodities. The S12, the Issue and Receipt Voucher shown Figure 6, is used by a subordinate level to requisition supplies from the next most centralized level. The S11, the Issue Voucher, is a simplified version of the S12 which is used by one facility to issue supplies to another, independent of level.

As implied in Table 4, the CMS receives requisitions in the form of S12s from district stores and issues S11s along with the product against the S12. All of the district stores visited use the S12 to requisition contraceptives, drugs, and vaccines from either CMS or the National Laboratory (KEPI). Of the four district hospitals from which we obtained this type of information, all use the S12 to requisition supplies while only one issues commodities to other facilities using the S11. None of the SDPs we visited used the S12 to requisition supplies. Instead, they send in letters or notes making their request. The supplies sent from the district stores are issued against the S11 which must be signed upon receipt at the SDP. Of the nine private SDPs, eight use the S12 to request commodities and only four confirm receipt using the S11. All five of the CBD stores visited use the S12 to requisition supplies, and only three issue commodities to the supervisors of community workers/distributors against the S11 or its equivalent. While the transfer of commodities is extremely rare, the one district store that reported doing this uses the S11 to confirm the transfer of supplies to another facility (whether it be another store or SDP).

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At present, only one district store has begun to justify its requisitions. It did this to defend its requisitions from arbitrary cuts made by the National Laboratory (KEPI) and CMS (see Figures 6 and 7). The National Laboratory thought that the Kilifi District Store was inflating its request in anticipation of an arbitrary cut in quantities shipped (a standard operating procedure of "cat and mouse"). Kilifi District, after three or four letters debating its requests back and forth with the National Laboratory, was asked to justify its request on the S12. It did this simply by indicating the quantities in stock at the time for each commodity requested. The National Laboratory responded by issuing the quantities originally requested. The typical practice is to submit requests indicating only the quantities requested without supporting information.

Recommendations

The S12 is more complex to use correctly because it includes unit cost and total cost data for each item requested as well as some detailed product identification information, all of which is typically left blank. We recommend that district stores continue to requisition using the S12--they are accountable to district budgets and should include cost data on their requests. We recommend that hospitals, SDPs, and CBD stores use the S11 for both requisitioning and confirming receipts of supplies as it is easier to fill out (see Figure 8).

We strongly recommend that all levels justify the quantities requested by indicating for each product (1) the current balance and (2) either the minimum reorder level or the average monthly consumption. If justified, the issuing store should have only one reason for not sending the full amount requested--insufficient supplies on hand.

G. Transfers

When commodities are grossly overstocked or are dead stock, the routine in all facilities visited, with the exception of Kilifi District stores, is to leave the items on the shelf until they are gradually used or expire, whichever occurs first. MOH regulations clearly provide for the transfer of donated supplies (e.g., contraceptives, vaccines, most of the basic drugs other than antibiotics) from an oversupplied facility to either (1) an undersupplied facility or (2) an exchange point facility (i.e., the district stores within districts). The only bookkeeping required in these cases is internal. The S11 and the S3 and/or S5 need to have the transfer recorded on them: the date, the quantity, and the destination.

Recommendation

We recommend that the simple procedures for transfers be reiterated by way of circular to district management teams, district storekeepers, and SDP staff. In addition, examples of transfers should be shared as part of the in-service commodity management training to be offered in the future.

H. Storage and Handling

1. Contraceptives and Basic Drugs:

As we examined the storage and handling practices exercised in stores and at SDPs, we looked at seven criteria (see Table 5):

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- a. Expiration dates are clearly marked on containers.
- b. Old viable stock is separated from new stock and expired stock is removed and either destroyed or turned over to the proper authorities according to MOH regulations.
- c. The practice of first-in, first-out (i.e., stock rotation) is practiced.
- d. Commodities are protected from rain and direct sunlight.
- e. Shipping containers or cartons/boxes are stored on pallets or shelves, keeping the product up off of the floor.
- f. Commodities are kept away from the walls, allowing for air to circulate around the containers or boxes.
- g. The ventilation within the storeroom is adequate to prevent dampness, accelerated decomposition, and rotting.

At the Central Medical Stores, with respect to contraceptives, only Depo-Provera and the Nova-T were marked with expiration dates--all other products did not have either production or expiration dates on the containers or labels. Consequently, first-in and first-out (FIFO) approach was not practiced in any systematic way; nor were expiration dates available at any other facility within the country for products other than those mentioned. All other storage and handling procedures were properly practiced. In addition, all proper storage and handling procedures were practiced with respect to drugs.

Of the seven districts for which storage and handling information was collected, none have expiration dates clearly marked, two separate new and old stock, three practice FIFO, all have adequate protection from the rain and sunshine, five palletize the commodities in storage, four keep the items away from the walls, and all but two have adequate ventilation.

Among the four hospitals for which we collected this information, only one does not separate new and old stock, two have items on the floor and against the wall, and one does not have adequate ventilation.

Half of the eight MOH SDPs do not separate new and old stock, three do not practice FIFO, one had items against the wall, and two lacked proper ventilation.

Of the nine private SDPs, a third did not separate new and old stock, only two did not practice FIFO, and only one did not keep items off the ground, away from the wall, and lacked adequate ventilation.

Among the five CBD stores, two did not separate old and new stock, two did not practice FIFO, two had items on the ground, three had items against the wall, and one lacked proper ventilation.

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Recommendation

The most serious problem is the lack of clearly marked expiration dates. Without these dates, one cannot be sure that the products dispensed will be effective and safe. The Division of Family Health sent a circular around to all Provincial Medical Officers dated May 26, 1983, indicating the expiration dates of all contraceptives by batch number. It is obvious that this information was either not shared and/or acted upon. It is important that a systematic effort be made to:

- (1) Identify and remove expired contraceptives from stock.
- (2) Identify viable product and replace expired stocks with usable commodities.

These steps need to be initiated immediately, starting at the Central Medical Stores. Once completed there, viable stocks can be identified for distribution to district stores for further distribution. Until these steps are taken, the practices of separating stock by expiration dates and rotating stock (FIFO) cannot be adequately followed.

2. Vaccines: In assessing the storage and handling of vaccines, we looked at six criteria:

- (1) Old vaccine is separated from new and used first.
- (2) A minimum-maximum thermometer is used.
- (3) Temperature charting is done consistently.
- (4) Unused vaccine is disposed of at the end of each day.
- (5) Percentage wastage.
- (6) Went without refrigeration for 4 or more consecutive hours during last month.

Table 6 presents a summary of the results of our assessment. Note that we did not visit the central vaccine store. Of the four district vaccine stores for which we have data, all separated old from new vaccines, only one did not use a mini-max thermometer, all did temperature charting consistently, and none were without refrigeration for an extended period during the last month.

Among the four hospitals for which we have information, only one did not have a mini-max thermometer, 1 had less than 50 percent wastage on average, three had between 50-70 percent wastage, and 1 was without refrigeration for 4 or more hours during the last month.

Only one of the 8 MOH SDPs visited did not separate old from new vaccine, three did not use mini-max thermometers, two did not do temperature charting consistently, one did not dispose of unused vaccine at the end of the day, two had less than 50 percent wastage while five wasted between 50-70 percent wastage and one wasted over 70 percent on average.

Of the five private SDPs that offer vaccinations, one did not separate old from new vaccine, three did not use mini-max thermometers, two did not do temperature charting consistently, and all five had wastage between 50-70 percent.

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Recommendations

It is obvious that cold chain procedures have been made a priority in Kenya. This was particularly evident in MOH facilities. This is not the specific area of expertise of any of the team members who assessed cold chain conditions. We followed the guidance of the KEPI Office in making this assessment. We are certain, however, that it would be worth repeating this assessment using a random sample of SDPs and districts, particularly if consideration will be given to followup in-service training in vaccine management.

I. Distribution:

None of the 11 districts visited reported distribution as being an obstacle to obtaining commodities from Nairobi. The MOH has entered into a range of agreements and contracts to assure the distribution of commodities to the districts. It appeared that the distribution of commodities from the district stores to SDPs was much more improvised and ad hoc. Again, the SDPs did not report transportation as being a major obstacle to obtaining their supplies--typically someone makes the extra effort to go and pick up commodities if they are in very short supply. At both levels, the complaints centered on the arbitrary reductions in quantities shipped from the CMS and KEPI which made filling requisitions within the districts more difficult--they passed on the shortfalls.

VI. USER/COMMODITY RECORDKEEPING AND REPORTING

A. Introduction

There are at least three types of family planning information that would be very useful at each level of the health system:

1. Program growth--Information about family planning clients that indicates trends in program utilization.
2. Program coverage--Program information that suggest the proportion of eligible women or women at risk of an unplanned pregnancy who are served by the program.
3. Commodity forecasting--Commodity issues and dispensed data that make it possible to make realistic estimates of contraceptive requirements.

There are a number of challenges faced by MCH/FP program managers when it comes to the collection, tabulation, and use of program data.

1. To get agreement on the minimum amount of information that will be needed at each level of the health system--the service provider, the district management team, the Division of Family Health--and for what purposes.
2. To figure out how service providers can collect the information without significantly compromising their time available with clients.
3. To get service provider generated data tabulated in such a way that the service providers themselves feel comfortable using the data.

4. To standardize reporting requirements and intervals so that the information obtained is comparable between and within districts and programs.
5. To get the information from all SDPs within districts to district management teams on a routine and timely basis and to provide easily understood methods for manipulating the data so that the district teams can use the data to make decisions (e.g., quantities of commodities to requisition, where to focus supervision/on-the-job training, staffing patterns within and between clinics, in-service training requirements).
6. To get the information from all districts to the Division of Family Health on a routine and timely basis so that national level decisions can be made using straight-forward approaches to analyzing the data--e.g., decisions regarding pre- and in-service training, contraceptive procurements, personnel deployment, etc.

We do not propose to address all of these challenges within this report. However, we intend to reflect on the information system as it exists now and to recommend certain improvements that can assist in meeting the six challenges stated above.

B. User Definitions

During the site visits, we asked the family planning providers that keep the clinic records and complete reports to share with us their definitions of (1) new acceptors and (2) continuing users. Twenty-eight of the 29 people who responded told us that new acceptors are "first time ever users" (see Table 7). This definition is particularly useful in helping to estimate contraceptive incidence rather than prevalence. Another individual suggested that a new acceptor is a person who is using the services of "this program for the first time." The four persons working in FPAK clinics use multiple definitions which are reflected in their monthly reports. For them, there are three types of new acceptors: (1) a client using family planning services for the first time anywhere, (2) a client using the services of this clinic for the first time, (3) a client using the services of this clinic for the first time this year. Each category is useful in a different way. The first enables program managers to ascertain the contribution made by their specific program to overall contraceptive prevalence. The second definition is useful in tracking "ever users" of a program or clinic. The third enables one to fairly accurately determine the point or period prevalence of clinic or program users--i.e., how many women were served this month/year?

Recommendations

While the multiple definitions used by FPAK are particularly helpful for program evaluation reasons, most persons interviewed and most of the team members felt that they might be cumbersome to track and that individuals collecting information using these multiple definitions could easily, frequently, and inadvertently introduce errors. Therefore, the team recommends the use of the most commonly agreed upon definition, "first time ever" user. Keep in mind that this is a conservative indicator of program growth--it does not track

first time users of a particular program's services. On the other hand, this definition will help to eliminate double counting individuals who transfer from one source of service to another.

C. Daily Activity Register

Of the 24 program sites for which we have responses about daily activity registers, we learned that 17 keep multiple sets of records (see Table 8). The nurses do this in order to collect all of the information that they think is important to keep, that they may need, and that others will request. Most commonly, the nurses keep separate copy books (bound notebooks), often one for new acceptors and another for continuing users. Sometimes, a separate book is kept for each method and within each book, different sections are kept for new acceptors and continuing users. The net effect of keeping multiple registers is that the nurses (1) spend too much time recording information into notebooks and (2) rarely abstract information from these notebooks for making decisions about the services offered.

Twenty-one of the 24 sites would be able to track new acceptors by method and 20 can track continuing users by method based on the daily registers kept (see Table 9). None, however, do.

One site tabulates the entries into the Daily Activity Register daily, weekly, and monthly. Two sites complete tabulations daily and monthly while six sites tabulate on a weekly and monthly basis. Two sites make tabulations only on a weekly basis. Thirteen sites make tabulations once a month only.

Two of the sites have both statistical clerks and nurses that tabulate daily activities. Six sites use only statistical clerks while 15 use only nurses.

Recommendations

We strongly recommend that only one set of daily activity registers be kept and this set (1) be designed to incorporate all pertinent information required by the SDP, district, and national levels, and (2) that the register be standardized for use by all organizations. To achieve this second objective, it may be necessary to have a standard core to the register and have an optional section built in for adaptation to the special needs of independent programs. We recommended the use of a daily activity register form similar to the ones used in Nigeria and Ghana that were developed collaboratively with CDC (see Figure 9). We urge the MOH and USAID to encourage donor and support organizations to be flexible with their reporting requirements so that all reports can be completed based on the single daily activity register.

It is extremely important that all organizations, SDPs, and district teams adopt the same definition of a new acceptor and continuing user so that the meaning of reported clients is the same throughout the country. In this way, the reporting systems can be pooled to serve as the basis for program evaluation.

We recommend that the frequency of tabulations be decided on by the individual SDP as long as a monthly cycle of tabulations and reporting can be maintained. CDC's recommendation is that a quarterly report be submitted from SDPs to the district team. However, the MOH and ESAMI team members felt strongly that it is important to continue with the monthly system of reporting.

If statistical clerks and nurses are both going to be used to tabulate daily activities, both cadres of workers will need to be trained. They will need to understand definitions, both be intimately familiar with the daily activity register (even though only the nurses will be filling them out), and will both need to master tabulation methods.

D. Summary Forms and Reports and Use of Data

Of the 27 sites for which we have data on reporting and use of information, 22 report both new acceptors and continuing users on a routine basis (see Table 8). Reporting is most consistent among CBD programs, FPAK clinics, and FPPS supported industrial clinics.

Only 18 of the 27 sites track new acceptors and continuing users from month to month, i.e., they look for changes in the number of clients from 1 month to the next. Some sites even chart the number of clients on a monthly basis. Again, tracking is done most consistently by CBD programs, FPAK clinics, and industrial clinics.

Only two sites, both CBD programs, use the data to estimate program coverage (i.e., the proportion of women in need in the service delivery area that are served by the program). None of the sites visited use the data collected to forecast contraceptive requirements.

Recommendations

As mentioned in the section above, we strongly recommend that new acceptors and continuing users be reported and tracked on a monthly basis at all levels. This is critical to (1) determining the growth of a family planning program and (2) to estimating contraceptive prevalence or program coverage. In fact, we recommend that new acceptors and continuing users be tracked by method so that provider/client preferences can be identified. In this way, in-service training can be adjusted based on the realities of SDPs and districts accordingly.

If either client or commodity data are reported by the SDPs to the district level, the data can and should be used to project contraceptive requirements based on changes in the program rather than solely on staff judgment. Improving the accuracy of forecasts, together with a justification of quantities requested, can go a long way in reducing the number of cases in which contraceptives are out of stock at the SDP and district store levels.

It is important that most of the information to be included in the monthly report be derived directly from the tabulation of the daily activity register. In this light, we recommend use of the Family Planning User Commodity Summary (report) as shown in Figure 10. This form was also derived from similar forms developed in Nigeria and Ghana.

VII. NATIONAL SUPPLY CONSIDERATIONS

A. The Kit System

As discussed in Section V. of this report, a kit approach is being used for the distribution of basic drugs and contraceptives to rural health centers and dispensaries. We have documented in Section V. that (1) use of the kits leads

to reordering when the fastest moving product is low; (2) that this results in stockpiling of slow-moving products; (3) that the fast/slow-moving contraceptives are not as consistent between SDPs within the same district or province as are basic drugs as a result of provider and client preferences; and that (4) there is general agreement among Kenyans that the kit system does ensure that almost all products packed in the kits are received by rural SDPs, which was not the case with the former system of open stock ordering.

Recommendations

We concluded that a more thorough examination of stock imbalances associated with the use of the kit system will need to be made in the pilot districts using the same methods employed during this assessment. We would expect that either supplementary, method-specific kits, or open stock supplementation will be required to reduce the endemic stock imbalances that currently exist throughout the country.

B. Transfers

As discussed in Section V., it is rare that slow-moving stocks are transferred to SDPs or districts with a greater demand for the products in question. However, it is the explicit written policy of the Family Health Division that the transfer of contraceptives, donated commodities, can be undertaken with the approval of the professional in charge of the sending SDP or store. Since the items are donations, no fiscal transfers of credit are necessary. The only requirement is that the transfers be documented in the S3 and/or S5 (inventory control cards).

Recommendation

We recommend that the MOH develop clear, written guidelines for the transfer of contraceptives, basic drugs, and vaccine. We also recommend that these guidelines be reiterated in depth during the next in-service training opportunity for physicians and nurses as soon as feasible.

C. Filling the Supplyline

We have documented in Section V. that (1) it is likely expired that contraceptives are stocked at each level of the supply system and (2) the expiration dates of the contraceptives in stock at the Central Medical Stores have still not been marked on the shipping containers or interior boxes, despite the fact that the Family Health Division did obtain production and expiration dates by batch number from the various manufacturers.

Recommendations

We urgently recommend that the following steps be taken as expeditiously as possible: (1) The expiration dates be marked on all contraceptive shipping containers stored at the Central Medical Stores; (2) expired stocks within the Central Medical Stores be separated from valid stocks and be disposed of according to established regulations; (3) a provisional allocation of fresh stocks of each contraceptive be supplied to all districts; (4) district health teams be trained to identify expired stocks, remove them from inventory, and dispose of them without drawing unnecessary attention to the ongoing programs; and (5) district health teams replace expired stocks from SDPs with viable supplies and refresh SDP staffs' memory as to how contraceptives are to be managed.

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VIII. FEEDBACK/DESIGN WORKSHOP

A. Objectives and Agenda

At the end of the field work, a Maternal-Child Health/Family Planning Commodity Needs Assessment Feedback and Design Workshop was held on August 23 and 24. The objectives of this workshop were to:

1. Present the findings and obtain critically constructive input into the further development of recommendations.
2. Elicit from the participants a consensus as to the priority improvements that are needed in commodity management.
3. Obtain from the participants a clear picture as to the steps to follow in implementing improvements.
4. Walk away from the workshop with a commitment on the part of the MOH to supporting the improvement process arrived at during the workshop and to have a better understanding of who will take responsibility within the MOH, and within what organizational structure.

Each of these objectives was met during the workshop.

As shown in the agenda (see Figure 11), the Kenyan team members presented all of the findings from the assessment. Following these presentations, ESAMI and CDC collaborators facilitated discussions that focused on the practical issues of how to move on to implementing commodity management improvements.

B. Workshop Participants

The discussions were very animated and led to a refinement of the modifications made by the ESAMI and CDC collaborative to MOH forms and practices as reflected in this report. A list of all participants can be found in Figure 12. It is noteworthy that we invited several participants to the workshop from the various sites and organizations visited during the field work. This proved to be an invaluable investment from the standpoint of "reality testing" and obtaining the inputs of people who are currently involved in service delivery, warehousing, inventory control, forecasting, and recordkeeping.

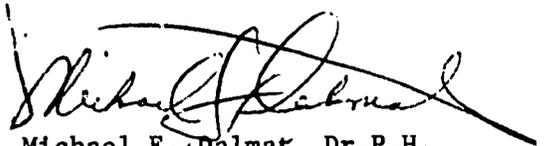
C. Followup and Implementation

The general steps agreed upon during the workshop for implementing commodity management improvements can be found in Figure 13. Following the Feedback/Design Workshop, the MOH is to decide on the organizational unit to coordinate commodity management improvements within Kenya. In addition, the MOH will identify pilot districts within which these improvements will first be implemented. The MOH will select MOH and nongovernmental staff working in these districts and at headquarters to participate in an Implementation Planning Workshop to be held in Arusha by ESAMI. During this Arusha workshop, the participants will (1) develop an implementation strategy and plan, (2) will improve their training techniques, and (3) develop algorithms for using data generated by the proposed information system. The plan developed by the participants will then be taken back to Nairobi for approval by the MOH.

Once the plan is approved, the core of trainers will begin working with one district health team at a time. Each district health team will receive orientation and specific training in (1) the use of the new commodity management and information systems, (2) use of the data generated for planning and management, and (3) supervisory/training skills. After the district health teams have been trained, each will begin training staff from a cluster of SDPs (3-5) in close proximity at a time to use the new systems. This training will take place in one of the SDPs within each of the clusters. Following the cluster training, trainers will visit each SDP to ensure that trained staff are not having difficulty in using the new systems. Once the systems are operational throughout the district, a second round of cluster training/technical assistance will be provided during supervisory visits in order to assist staff in getting used to using data for decisionmaking, making use of simple algorithms.

ESAMI and CDC will be called upon to work with the core, national training/implementation team to assist in the training of (1) the district health teams from one or two districts and (2) the initial cluster training and followup assistance in each of these districts. Once this has been done, ESAMI will be available as needed, but the major responsibility for completing the training will rest with the national training team.

After a year of implementation training and support, ESAMI and CDC will most likely be called upon to evaluate the progress made. Once adjustments are made based on the evaluation, the implementation of the commodity management improvements will be extended to the rest of the districts within Kenya.



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Patrick J. McConnon

TABLE 1

Adequacy of Supplies
Contraceptives (Months Supply on Hand)

A.	<u>CMS</u>	<u>MICRO</u>	<u>EUGY</u>	<u>NEOG</u>	<u>OVUL</u>	<u>NT</u>	<u>CUT</u>	<u>L.C.</u>	<u>L.D.</u>	<u>DEPO</u>	<u>FT</u>	<u>CONDOMS</u>		
		19.4	34.9	2.7	53898	10.4	0	0	0	1.9	3.9	11.3		
B.	<u>IPPF/ IPAK</u>	4.3	3.5	0.7	0	5.6	0	0	16.0	3.2	2.2	2.4		
C.	<u>District Store</u>	<u>KITS</u>	<u>MICRO</u>	<u>EUG</u>	<u>NEOG</u>	<u>OVUL</u>	<u>NT</u>	<u>CUT</u>	<u>L"C"</u>	<u>"D"</u>	<u>DEPO</u>	<u>FT</u>		
	Mombasa	NA	1.7	4.4	1.6	0	0	0	2.7	0	NM	NM		
	Emhu	6.5	0.4	5.4	16.3	0	1.4	NM	NM	NM	1.6	17.1		
	Murang'a	0	50.4	196.5	1016.2	0	59.1	0.6	4.2	4.2	2.9	5.3		
	Nyeri	0	4.4	22.9	14.3	0	5.5	NM	1.6	1.6	2.4	6.1		
	Nakuru	4.4	19	104	7.5	0	0	0	0	0	1.0	14.1		
	Baringo	94.1	284.9	12.4	459.9	0	0	NM	128.9	129.9	1.5	38.0		
	Kakamoga	0	3.3	5.8	18	0	0	0	41	4	2.5	1.5		
D.	<u>MOH SDPS</u>	<u>KITS</u>	<u>MICRO</u>	<u>EUG</u>	<u>NEOG</u>	<u>OVUL</u>	<u>NOVAT</u>	<u>CUT</u>	<u>"C"</u>	<u>"D"</u>	<u>DEPO</u>	<u>FT</u>		
	Kenyatta	0	7.8	26.7	26.7		1	1	0	16	4.2	5.4		
	Nemburi	0	30	236	0	0	0	0	0.4	6.3	0	0		
	Runyenjes	0	0.2	298	3.4	0	0	0	33	114	0	9.3		
	Kangema	0	1.8	8.5	0	0	0	0	3.8	3.8	0	95		
	Kariobangi	0	1.1	0.8	0	0	10	0	0	0	0.7	16.9		
	Vipincio	-	-	-	-	-	-	-	-	-	-	-		
	Tiwi	-	-	-	-	-	-	-	-	-	-	-		
	Kakamega	-	-	-	-	-	-	-	-	-	-	-		
E.	<u>FPAK SDPS</u>	<u>MICRO</u>	<u>EUGY</u>	<u>NEOG</u>	<u>OVUL</u>	<u>NOVAT</u>	<u>CUT</u>	<u>L"C"</u>	<u>"D"</u>	<u>DEPO</u>	<u>FT</u>	<u>C</u>		
	Mombasa	29	23	20	0	16	0	14	14	1.6	26	2.1		
	Nyeri	12	22	11	0	2	2	1.8	1.8	0.8	4.0	2.5		
	Kakamega	-	39.7	-	0	NM	0.3	NM	NM	0	0.04	0		
F.	<u>CBD Stores</u>	<u>MICRO</u>	<u>EUG</u>	<u>NEO</u>	<u>OVUL</u>	<u>NT</u>	<u>CUT</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>DEPO</u>	<u>FT</u>	<u>C</u>	
	Meru PCMA	0.5	13.6	2.4	0	0	0.2	35.5	0	1.1	6.1	6.2	6.0	
	Kirinyaga	2.9	8.7	0	0	0	0	0	0	0	0	40.9	5.9	
	Mikomani	0	0	0	0	0	19.8	0	0	0	0	0	9.0	
	Kandara	9.8	11.0	13.8	0	0	0	0	0	0	0	2.0	1.6	
	Kakamoga	5	6	0	0	0	0	-	9.5	9.5	3	0	1.5	
G.	<u>FPPS SDPS</u>	<u>Cashewnut</u>	1.6	12.7	0	0	6	0	0	NM	NM	10.8	144	174
	Fluorspar	32.6	33.8	NM	0	0	41	.0	41	NM	NM	20.5	4.6	
	Pan Paper	2.5	1.8	0	0	15.5	150	0	160	62	78	10	2.3	
H.	<u>PCMA SDPS</u>	<u>Kaimosi</u>	5	6	0	0	0	0	9.5	9.5	3	0	1.5	
	Kikuyu	-	71.6	-	-	0	0	0	9.7	9.7	0	2.7	1.9	

NOTE: NA=not applicable.

TABLE 2

Adequacy of Drugs

(Months Supply on Hand)

A. <u>Districts (Stores)</u>	<u>Chloroquine</u>	<u>Mintezol</u>	<u>Ferrous Sulphate</u>	<u>Penicillin</u>	<u>Aspirin</u>
Mombasa	1.7	0	0.3	0	1.3
Kilifi	8.3	0	0	3.9	5.9
Embu	2.5	0	17.2	2.7	2.1
Murang'a	0	0	0	0	0
Nyeri	20.0	30.0	8.0	6.7	8.0
Kakuru	3.7	10.4	0.6	0	4.3
Baringo	0	0	0	0	0
Kisumu	0	0	0	0	0
Kakamoga	1.4	0	0.1	0.4	0.4
B. <u>SDPs-MOH</u>					
Vipingo-Kilifi	0	0	0	0	0
Rumenjes-Embu	2.1	8.3	21.7	0	0.41
Nemburi-Embu	0	0	0	0	0
Kangema RHC	30	6.3	6.0	5.0	6.0
Nyahera-Kisumu	0.3	2.5	5.0	0.3	0.1
Tiwi RHDC	0	0	0	0	0
Kariobangi Clinic	0	6.0	0	0.2	5.9
Msambweni	0.3	0	0.1	0.4	0.4
<u>Private (FPPS)</u>					
Cashewnut Clinic	No information kept				
Fluorspar Clinic	No information kept				
Pan Paper Clinic	No information kept				
<u>PCMA</u>					
Kaimosi Clinic	No information kept				
Kikuyu Clinic	No information kept				
Kirieni Clinic	No information kept				
<u>CBD</u>					
Mkomani Urban	0.3	1.4	1.2	0.4	0
Kirinyaga	7.1	4.2	12.2	9.0	8.4
Kandara CBD	NA	NA	NA	NA	NA
Chogoria Poma	NA	NA	NA	NA	NA
Emuhaya CBD	NA	NA	NA	NA	NA

NOTE: NA=not applicable.

TABLE 3
Adequacy of Vaccines
(Months Supply on Hand)

	<u>BCG</u>	<u>MEASLES</u>	<u>POLIO</u>
<u>KEPI District Stores</u>			
Mombasa PMO	1.9	0.8	1.8
Mombasa PGH	1.3	10.3	3.2
Kilifi	0.8	3.9	4.2
Msambweni	0	0	0
Embu	2.6	5.0	0.9
Murang'a	16.5	32.2	0.6
Nyeri	0	0	0
Baringo	6.0	6.0	6.0
Kisumu PGH	0	0	0
Chogoria	0.8	2.4	2.3
Kakamoga	0	12.0	10.5
Nakuru	1.0	1.9	1.1
<u>SDPs</u>			
Vipingo	3.1	4.7	3.9
Runyenjes	0.3	0.4	0.2
Nemburi	2.4	0.9	0.9
Kangema	0	0	0
Nyahera	0	0	0
Kirieni	1.3	1.3	2.2
Tiwi	0.1	0.1	0.1
Kariobangi	1.7	2.9	1.1
<u>CBD</u>			
Mikomani	6.7	8.3	8.3
<u>Private SDPs</u>			
Cashewnuts	3.9	1.2	1.0
Fluorpar	1.0	1.0	1.0
Pan Paper	0	4.5	1.8
PCMA-Kaimosi	0	0.5	1.0

TABLE 4

Commodity Recordkeeping: Use of Forms

	<u>Requisition/ Receipt (S12)</u>	<u>Weekly Activity Ledger (S3)</u>	<u>Daily Activity Bin Card (S5)</u>	<u>Issues (S11)</u>	<u>Dispensed (Daily Activity Register)</u>
A. <u>CMS</u> (n=1)	NA	1	1	1	NA
B. <u>IPPF/FPAK</u> (n=1)	1	1	1	1	NA
C. <u>Districts</u>					
1. Stores (n=6)	6	4	5	4	0
2. District Hospitals (n=6)	4	1	1	1	2
D. <u>MOH SDPs</u> (n=6)					
Use	0	0	0	6	6
NA	3				
E. <u>CBD</u>					
1. Stores (n=5)	5	3	2	3	3
2. Community Health Workers/Distributors (n=5)					
Use					2
NA	5	5	5	5	
F. <u>Private SDP</u>					
PCMA (n=2)	1	0	1	0	0
FPAK (n=4)	4	3	0	4	4
INDUSTRY (n=3)	3	0	1	0	4

NOTE: NA=not applicable.

TABLE 5

Correct Storage and Handling of Contraceptives
and Preventive/Curative Drugs

	<u>Expira- tion of Dates Marked</u>	<u>Separa- tion of New From Old</u>	<u>FIFO</u>	<u>Protect From Rain/ Sun</u>	<u>Off Ground</u>	<u>Away From Wall</u>	<u>Venti- Lation</u>
A. <u>CMS</u>	Noristerat	Yes	Yes	Yes	Yes	Yes	Yes
B. <u>IPPF/FPAK</u>	Condoms Depo are marked and others are not	Yes	Yes	Yes	Yes	Yes	Yes
C. <u>District</u>							
1. Stores (n=7)	0	2	3	7	5	4	5
2. Hospitals (n=4)	0	3	4	4	2	2	3
3. SDPs (n=8)	0	4	5	8	8	7	6
D. <u>CDB (n=5) Stores</u>	0	3	3	5	3	2	4
E. <u>Private</u>							
1. FPAK	0	4	4	4	4	4	4
2. PCMA	0	0	1	2	1	1	1
3. Industrial	0	2	2	3	3	3	3

TABLE 6

Correct Storage and Handling of Vaccines

	Old Sep- arated From New Stock	Min- Max Therm	Temp Charting Done	Dispose of Unused At End of Day	Percentage Wastage			Last Mon Withou (4+ Hour Refrigera
					<50%	50-70%	>70%	
<u>C. District (n=4)</u>								
1. Stores	4	3	4	NA	NA	NA	NA	0
2. Hospitals (n=4)	4	3	4	4	1	3	0	1
3. SDPs (n=8)	7	5	6	7	2	5	1	0
<u>Private (n=2)</u>								
1. PCMA	2	0	2	2	0	2	0	0
2. Industrial (n=3)	2	1	2	3	0	3	0	0

NOTE: NA=not applicable.

TABLE 7

Definitions of New Acceptors

<u>n</u>	<u>Districts</u>	<u>First Time Ever</u>	<u>First Time This Program</u>	<u>First Time Anywhere</u>	<u>First Time This Program</u>	<u>First Visit This Clinic This Year</u>
7	Hospitals	7				
8	SDPs	8				
5	CBD programmes	4	1			
	<u>Private</u>					
4	FPAK			4	4	4
2	PCMA	2				
3	Industrial	<u>3</u>	—	—	—	—
	TOTAL	24	1	4	4	4

TABLE 8

Use of Daily Activity Registers

n	<u>District</u>	Keep Multiple Sets of <u>Registers</u>	Can Track by Method		Frequency of Tabulat.			Person Tabu. Stat.	
			<u>New Accept.</u>	<u>Cont. Users</u>	<u>Daily</u>	<u>Weekly</u>	<u>Monthly</u>	<u>Clerk</u>	<u>Nurse</u>
7	Hospital	6	7	7	1	2	6	4	3
8	SDPs	6	6	5	2		7	3	6
<u>Private</u>									
2	PCMA	2	1	1			2		2
4	FPAK	0	4	4		4	4		4
3	Industrial	3	3	3			3	1	2

TABLE 9

Summary Reports and Local Use of Data

n	<u>District</u>	<u>Report</u>		<u>Track NA/CU</u>		<u>Estimated Coverage</u>	<u>Forecast Contracept. Requirement</u>
		<u>New Accept. by Method</u>	<u>Cont. User by Method</u>	<u>Month to Month Total</u>	<u>by Method</u>		
7	Hospital	6	6	3	3	0	0
8	SDPs (n=8)	4	4	2	2	0	0
5	CBD program	5	5	5	5	2	1
	<u>Private</u>						
4	FPAK	4	4	4	4	0	0
2	PCMA	1	1	1	1	0	0
3	Industrial	3	3	3	3	0	0

FIGURE 1

CURRENT FLOW OF CONTRACEPTIVES,
VACCINES, AND PREVENTIVE/CURATIVE
DRUGS

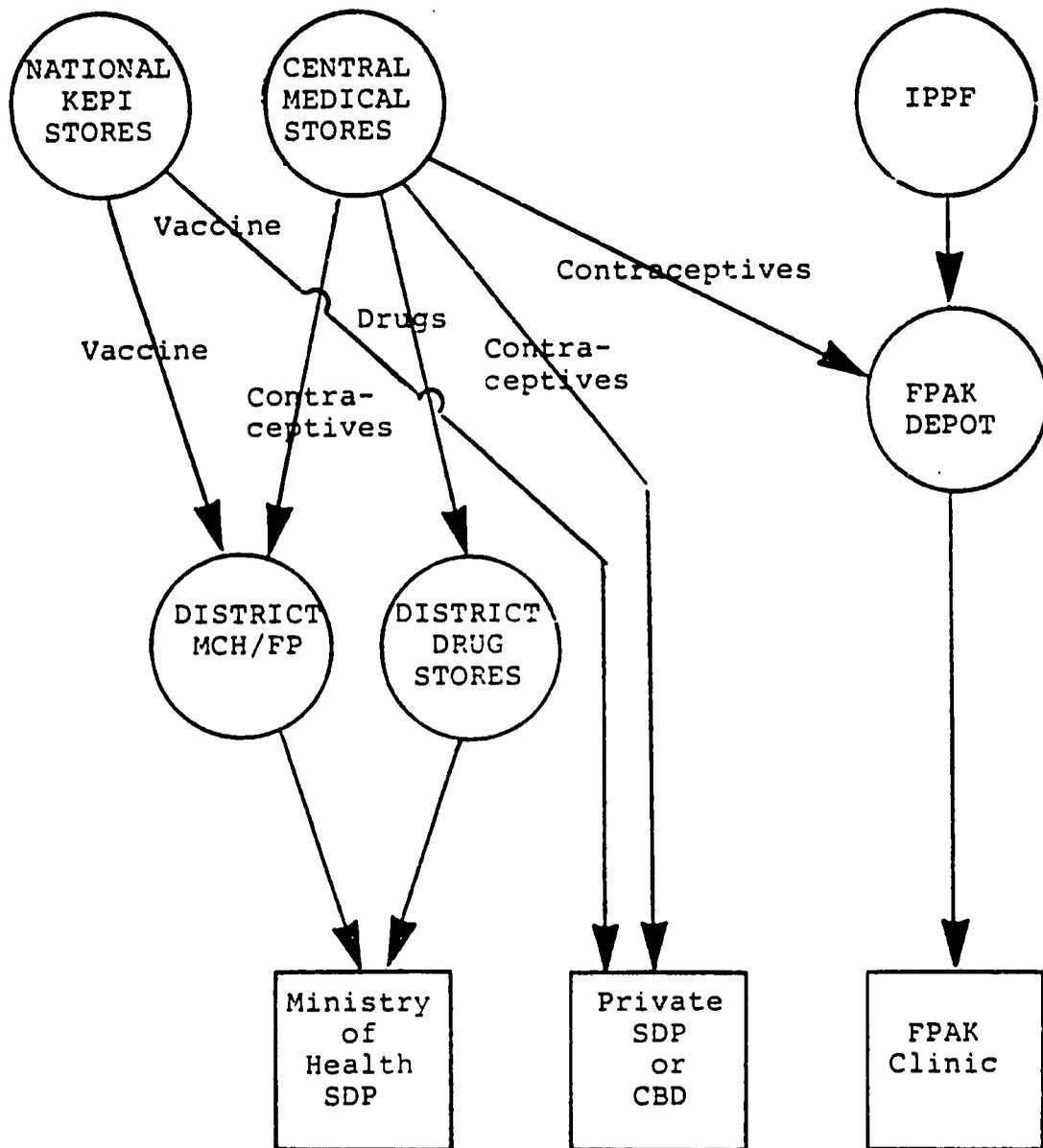


FIGURE 2

PROPOSED FUTURE FLOW OF CONTRACEPTIVES,
VACCINES, AND PREVENTIVE/CURATIVE DRUGS

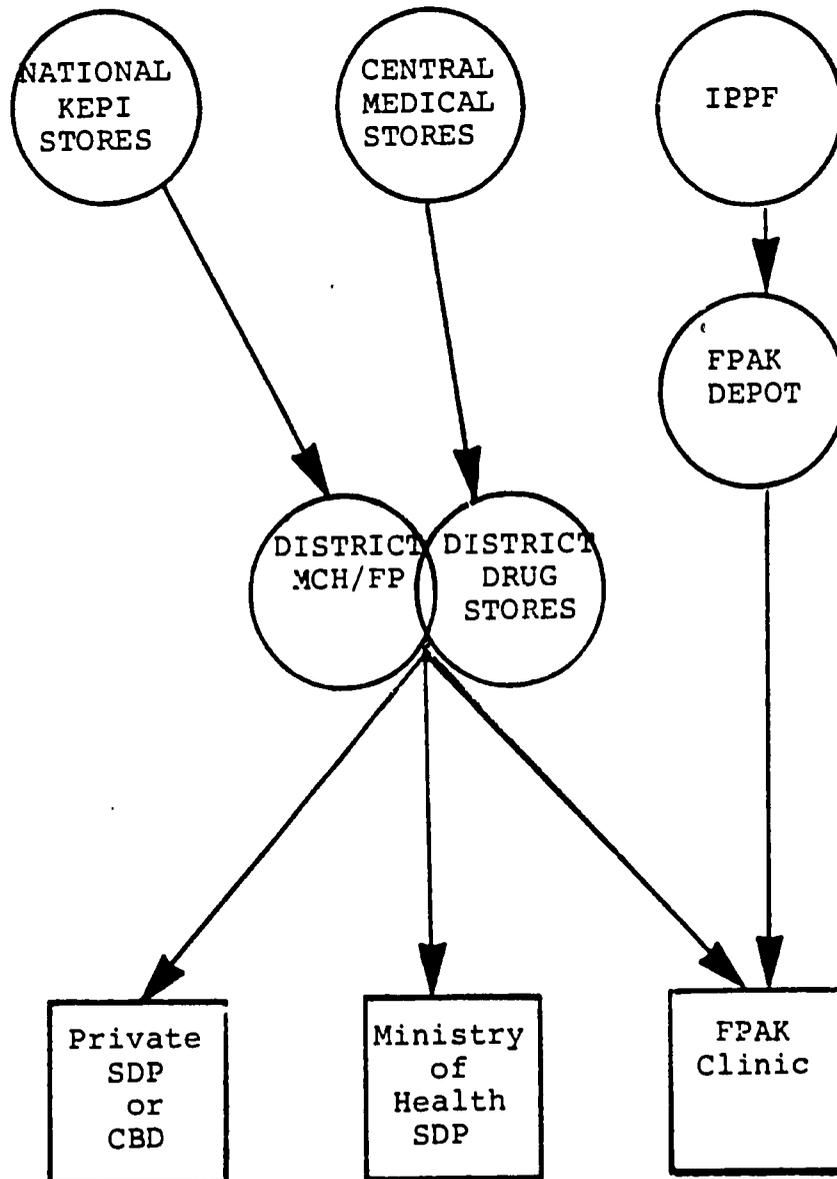


FIGURE 3

FORM S3

GOVERNMENT OF KENYA
STORES LEDGER AND STOCK CONTROL CARD

FULL DESCRIPTION USING APPROVED NAMES AND SHOWING SPECIFICATION REFERENCES OR OTHER DATA TO AID IDENTIFICATION

ITEM CODE NO. **5850-44-461326** ← THE APPROVED CODE NUMBER.

DESCRIPTION: **CASH EMERY ABRASIVE 35 BY 1 (GOOD) QUALITY.**

MINISTRY: **WORKS** DEPT./BRANCH: **SUPPLIES.** REGISTERED No. RECORDED AND SIGNED FOR BY RECORDED KEF. PER. **A**

PRECISE LOCATION IN STORE: **HELD IN BULK AT 20W33** UNIT OF ISSUE: **SHEETS.** LOCATION: **A/23.**

1 Date	2 Voucher Number	3 Supplier or Requisitioning Office	4 Receipts			5 Issues			6 BALANCES		7 CONSUMPTION RECORD				
			Qty.	Invoice Unit Price	Value	Qty.	Average Unit Price	Value	Qty.	Value	Month	197-1 7-	197-1 7-	197-1 7-	197-1 7-
	B/F	Card No. -								NIL	July				
8.8.75	12345	NGUNDU BRGS	5000	1/-	5000/-			5000	5000/-	August	5020				
9.8.75	54321	D.C. KISUMU				20	1/-	20/-	4980	September					
10.8.75	73212	C.M. T.C.				3000		3000/-	1980	October					
24.8.75	83441	MOMBASA				500 A		500/-	1480	November					
-	83442	NAKURU				500 A		500/-	980	December					
25.8.75	12374	NGUNDU BRGS	5000	1/10	5500/-			5980	6480/-	January					
27.8.75	41251	GENIE WKSHP.				2000	1/09	2180/-	3480	February					
1.9.75	98271	PRINCE'S H.Q.				500		548/-	3480	March					
										April					
										May					
										June					
										Annual Usage					

THIS DATA IS TAKEN FROM THE SB DAILY SUMMARY SHEET.

BRIEF DETAILS OF THE SUPPLIER OR CUSTOMER.

Col. 6 DIVIDED BY COL. 5

Col. 11 DIVIDED BY COL. 10

BALANCE VALUE ENTERED AGAINST C/F TOTAL AND AMENDED AGAINST EACH RECEIPT AND CARRY FORWARD ENTRY.

SEE PARA 58. → Buffer Stock

SEE PARA 54. → Reorder Levels

SEE PARA 511. → Recorder Qty.

ENTER FULL DETAILS OF ANY FORECAST EXCEPTIONAL REQUIREMENTS OR KNOWN REQUIREMENTS

THESE ARE THE REGISTERED NOS. OF THE RELEVANT SUPPLY VOUCHERS

REQUIREMENTS SHOULD BE SPECIFIED ON ORDERS.

44.

FIGURE 5

Control Stock

Mini Max	<u>S3 Ledger</u>	<u>S5 Bin Card</u>	<u>Simplified Balance Sheet</u>
<u>CMS</u>	XX	X	
<u>District (Max)</u>			
Stores	XX	X	
Hospitals	XX		
SDPs			X
<u>CBD</u>			
Stores			X
Supervisor			X
<u>Private</u>			
NGO Clinics,	X		
FPAK			
Industrial Clinics			X

XX-Required by law
X-Recommend use

FIGURE 6

ISSUE AND RECEIPT VOUCHER

UN: 309121

Supplier/Issuing Office: **KEPI**
 Min./Dept. **KEPI**
 Issuing Unit **(at W. Kiarie)**
 Address **NAT P.H. CAMP**
 Issuing Officer **E. L. KARAN**
 Designation and Stamp **RBI**
 Merchant _____
 Address _____
 Date _____

Requisitioning/Receiving Office: **MCH**
 Min./Dept. **Kitale District**
 Indenting Unit **DPH'S**
 Address **100 x 9**
 Receiving Officer **Kitale**
 Designation and Stamp **DPHO**
 Reason for Demand (see Note 4) _____

Issue Approved by _____
 Date _____
 Stores Packed by _____
 Stores Recorded by _____
 Mode of Despatch **MPS**
 L.P.O. No. **PMO COME**
 Delivery Note _____
 Invoice _____

Indent Approved by _____
 Date **11/6/85**
 Address for Delivery **Kitale Hospital**
 Receipt Recorded by _____
 Chargeable to **Health**
 Vote/Head _____
 S/Head/Item No. **11/6/85**

a	b	c	d	e	f	g	h	i	j	k	l	m
Item	Cat. No.	Location	Description of Stores	Unit	Quantity Required/Ordered	Quantity Issued/Received	Quantity to Follow	Rate	Total Value	Stock Balance	Ledger Folio No.	Remarks
		Instock	VACCINS / SERA									
1												
2	2500		BCG	Doses	7750	7600						
3	500		DPT	"	21600	2100						
4	2000		Polio	"	21100	22000						
5	4200		Measles	"	2100	2100						
6	1500		Tetanol	"	9870	10000						
7	100		Typhoid	Doses	500	5x100						
8	1		Anti Snake Serum	"	83	20x10ml						
9	2		Anti Rabies Serum	"	28	10x1ml						
10	0		Anti Rabies Serum	Doses	2	NIL						
			γ globuline		6	2x5ml						
TOTAL												

Certified that the above item/s has/have been Received/Issued and recorded on Ledger/Inventory.
 Delete as appropriate.

Signature of Issuing Officer **E. L. KARAN**
 Date **26/6/85**

Vac 26/6/85
 This voucher with _____
 No. Continuation Sheet/s _____

Signature of Receiving Officer and Date

REPUBLIC OF KENYA
ISSUE AND RECEIPT VOUCHER

Supplier/Issuing Office: Health Dispatching/Receiving Office: Health

Issue Approved by: [Signature] Date: 18/1/85

Min/Dept: Health Issuing Unit: DISTRICT HOSPITAL

Address: U. BUA V. DISTRICT

Stores Packed by: [Signature] Receiving Officer: [Signature]

Stores Recorded by: [Signature] Designation: MEDICAL OFFICER OF HEALTH

Mode of Dispatch: M/S Reason for Demand: KLIFT DISTRICT

Designation and Status: [Signature] Invoice: JA 22160

Chargeable to: HEALTH

Staff/Head/Item No. [Signature]

Item	Cat. No.	Location	Description of Stores	Unit	Quantity Required/Ordered	Quantity Issued/Received	Quantity to Follow	Rate	Total Value		Stock Balance	Ledger Folio No.	Remarks
									Sh.	Cts.			
1			Anti Rabies	1000	5000	400							
2			Rabies	11	50,000	5000							
3			1. Toxoid	11	50,000	2x10=20							
4			1. A B	875	50	5x10							
5			Anti Rabies/Toxoid	11	100	1x10=10							
6			10 Anti Snake Serum		30								
TOTAL													

Certified that the above items has/have been received/issued and recorded on Ledger/Inventory.

Drawn as appropriate (C. 2. 1977)

54

Signature of Issuing Officer and Date: [Signature] Value: 735/85

Signature of Receiving Officer and Date: [Signature]

FIGURE 8

Recommended Use of Requisitions and Issuing Forms
to Justify Orders

	<u>S12</u> <u>Requisitions</u>	<u>S11</u> <u>Issues</u>	<u>Simplified Requisition/ Issue Vouchers</u>
<u>CMS</u>	X		
<u>District</u> <u>Stores</u>	X	X	
Hospitals		X	
SDPs		X	
<u>CBD</u> <u>Stores</u>	Current (National)	Future	Current (Local)
<u>Private</u> <u>NGO Clinics</u>	Current	Future	
FPAK	Current	Future	
Industrial Clinics	Current	Future	

Include: Balance on hand
Average monthly consumption
Minimum reorder level

NOTE: X=Continue as doing.
Current=Currently doing, consider not doing in future.
Future=Consider doing in the future.

Figure 9

FAMILY PLANNING USER COMMODITY

DISTRICT _____ MONTH _____ YEAR _____

DATE	NAME	VISIT NO.	NEW ACC.	MICROGY.	EUGYNON	METHODS DISPENSED DURING VISIT						OTHER							
						PILL			IUCD			CONDOMS	FOAM TABS	DEPO PROV.	INSECT.	PREGNANCY TEST	STERILIZA. REFERRAL	OTHER	
						NOVA T	NOVA F	NOVA R	NOVA T	NOVA F	NOVA R								
2/2	AD	011								20									
"	SR	014						1											
"	GA	017							1										
"	SR	018								2									
"	SR	019												1					
<hr/>																			
2/2	YV	021																R	
"	JM	022																X	
"	NK	023											1						
"	JK	024								6									
"	JK	025																	X
"	AD	026								2									
"	LN	027								R								R	
"	SN	028								R									
"	MD	029							K										
"	GM	030																	
"	NE	031																	
"	SM	032																X	
"	LN	033																	
"	AD	034																	
"	SN	035																	

PAGE TOTALS

New Accept.	6	0	0	-	-	1	-	0	0	0	1	0	1	-	0	0	2	0	0
Contin. Us.	25	2	1	-	-	0	-	1	1	1	3	0	-	1	1	0	1	1	1
Commodities	11	6	3	-	-	1	-	0	1	0	180	6	1	-	1	1	1	1	1

FIGURE 10

FAMILY PLANNING USER/COMMODITY SUMMARY

DISTRICT _____ INSTITUTION _____ REPORTING PERIOD _____

	METHODS													OTHER			
	PILL						IUCD						Condoms	Foaming caps	Depo Provera	Pregnancy Test	Sterilization Referral
	No Visits	Microgynon	Eugynon		Nova T												
Initial Balance																	
Quantity Received																	
Quantity issued/Dispensed																	
Final Balance																	
MIN REORD LEVEL																	
AMOUNT REQ																	

65

MCH/FP COMMODITY NEEDS ASSESSMENT

FEEDBACK AND DESIGN WORKSHOP

23RD - 24TH AUGUST 1985 - NAIROBI

FRIDAY, 23RD AUGUST

8.30 A.M.	Opening Comments	S. Kanani J. Kigundu
9.15 A.M.	Objectives, Introductions Overview	L.K. Ndungu
9.45 A.M.	Tea	
10.00 A.M.	<u>Feedback from the field</u> 1. Commodity Management	C. Thube A. Kamau A. Ophwette S. Ongayo
11.00 A.M.	<u>Feedback from the field</u> 2. User/Commodity Statistics and Reporting	R. Waithaka S. Ongayo
12.00	L U N C H	
1.00 P.M.	<u>Feedback from the field</u> 3. Uses of Data	S. Ongayo
1.30 P.M.	<u>Feedback from the field</u> 4. National Supply Considerations	C. Thube S. Ongayo

2.00 P.M. Commodity Management

- 1. Technical Recommendations L.K. Ndungu
- 2. Discussion D. Onyango
- 3. Conclusions J. Katorobo

M. Dalmat

3.00 P.M. Coffee

3.30 P.M. User/Commodity Statistics
and Reporting

- 1. Technical Recommendations L.K. Ndungu
- 2. Discussion D. Onyango
- 3. Conclusions L.K. Ndungu

6.00 P.M. END OF DAY

SATURDAY, 24TH AUGUST

8.00 A.M. Uses of Data

- 1. Technical Recommendations L.K. Ndungu
- 2. Discussion J. Katorobo
- 3. Conclusions D. Onyango

9.30 A.M. National Supply Considerations

- 1. Technical Recommendations D. Onyango
- 2. Discussion J. Katorobo
- 3. Conclusions L.K. Ndungu

10.30 A.M. T E A
11.00 A.M. Implementation Process and
Organization

- 1. Summary of What Needs to be Done C. Thube
- 2. Process of Implementation L.K. Ndungu
- 3. Organizational Participation and Responsibility J. Kigundu

FIGURE 12

LIST OF PARTICIPANTS

<u>No.</u>	<u>Name</u>	<u>Organization and Designation</u>	<u>Address</u>
1.	L. K. Ndungu	Consultant ESAMI	P.O. Box 3030 Arusha
2.	D. Onyango-Onuodo	Consultant ESAMI	P.O. Box 3030 Arusha
3.	S. N. Ongayo	Economist Ministry of Health (MOH)	Box 30016 Nairobi
4.	R. W. Walthaka	SPHN MOH	Box 3005 Nairobi
5.	C. K. Thube	Economist Afrya House	Box 3004 Nairobi
6.	A. N. Kamau	Statistical Officer MOH	Box 4331 Nairobi
7.	A. O. Opanette	Rog Clinical Officer/ Trainer, D.F.H.	Box 4332 Nairobi
8.	E. K. Kithinji	MCH/FP Nurse Trainer D.F.H.	Box 4331 Nairobi
9.	R. W. Kamunya	Nursing Sister (KRN/M/PD) FPAK	Box 226
10.	J. M. Arome	P.H.N. Kilifi District	Box 9 Kilifi
11.	L. W. Cege	Head, Training Section Div. of Family Health	Box 4330 Nairobi
12.	G. M. Magiri	Officer Research & Evaluation	FPAK Box 30581
13.	G. Z. Mzencu	Manager, Finance & Admin. FPAK	Box 30 Nairobi
14.	H. Sandbladh	MD. OBGYN, Head of MCH/FP/Nutr Unit, AMREF	Box 30125
15.	J. Robertson	Programme Administrator JSI/FPPS	P.O. Box 460

<u>No.</u>	<u>Name</u>	<u>Organization and Designation</u>	<u>Address</u>
16.	Sellah Nakhisa	Nurse Coordinator Protestant Churches Medical Association	P.O. Box 30690 Nairobi
17.	Anne M. Minage	Community Health Coord. CCS of Mt. Kenya East (CPK Diocese of Mt. Kenya East)	Box 290 Kerugoya
18.	Esther N. Kiragu	Senior Nursing Officer Medical Supplies Unit (CMS)	Box 4042
19.	Michael Dalmat	Public Health Advisor	CDC Division of Repro- ductive Health 1600 Clifton Rd., NE Atlanta, GA 30333
20.	Jennifer J. Mukolwe	Programme Manager MCH/FP) Maendeleo	P.O. Box 44412 Nairobi
21.	T. M. Oduori	DCNO, MOH HQ.	MOH HQ., Box 30016 Nairobi
22.	VPJ de Wit	MOH	Kilifi District
23.	A. Roth	Management Unit of Drug Supplies to RHF's, MOH, NB	MOH HQ Box 30016, NM
24.	C. Resnick	HPIP/HIS (Computer) HQ	MOH Box 30016, NRB
25.	Eliud A-Kikwai	Kenya Fluorspar Co. Ltd.	P.O. Eldor
26.	Dr. S. Kanani	MOH HQ	Box 30016, NB
27.	Dr. John Kigonda		

FIGURE 13

PROPOSED IMPLEMENTATION PROCESS

