MILESTONE COMPLETION REPORT
CONTRACT NUMBER: 263-C-00-99-00017-00

To: Brenda Doe
Cognizant Technical Officer
USAID Mission to Egypt

CC: Gary V. Kinney
Director, Contracts Division
USAID Mission to Egypt

From: Jestyn Portugill
Chief of Party / Population / Family Planning IV of Egypt

Date: July 15, 2001

Task No:	7
Task Description:	Contraceptive Procurement and Logistics Management Systems fully funded by the GOE with Pricing Rationalized
Milestone No:	7.1
Milestone Description:	Logistics Management MIS integrated with services MIS
Sources of Verification:	MOHP Records
Planned End Date:	1/2000
Status:	Completed

Comments:

The Integrated Consumption / Distribution MIS (ICDMIS) has been designed to provide executive managers at the Ministry of Health and Population of Egypt with the capability to generate comparative analysis and reports based on both contraceptive distribution data managed by the Egyptian Pharmaceutical Trading Company (EPTC) and consumption of contraceptives data managed by the MOHP's System Development Project (SDP).

USAID

UNITED STATES AGENCY for INTERNATIONAL DEVELOPMENT

CAIRO, EGYPT

September 3, 2001

Mr. Jestyn Portugill
Chief of Party, Pathfinder
28L El Safa St., Off El Gazayer St.,
New Maadi, Cairo, Egypt

REF: Contract # 263-C-00-99-00017-00
Task Number 7
Milestone No. 7.1: ***"Logistics Management MIS Integrated with Services MIS"***
Planned End Date: January 31, 2000

Dear Mr. Portugill:

This is to acknowledge receipt of documents related to milestone performance under the referenced contract and to provide Pathfinder with USAID's official response to Pathfinder's reporting of this milestone as "completed". The Ref. document was received on July 18, 2001.

The document presented by Pathfinder, ***"Logistics Management MIS Integrated with Services MIS"***, does not represent satisfactory supporting documentation on the achievement of the milestone.

From the attached report, we understand that the Integrated Consumption/Distribution MIS has been developed and is being used now at the Ministry of Health and Population.

However, the assessment report for the CIIS at the EPTC indicates that there is a problem with the CIIS 3rd generation module. This module captures the amounts of commodities distributed through the network of regional warehouses of the Ministry of Health and Population, and is a key data source for the Integrated MIS Consumption/Distribution MIS.

USAID Office Building
Plot 1/A off El-Laselki street
New Maadi, Cairo - Egypt.
Postal Code #: 11435

The Assessment Report stated that the CIIS 3rd generation is not yet sustainable for technical and managerial reasons between the MOHP and the EPTC. Primarily, the system is not yet completed and there is still some work required to ensure that the entire array of reports available through the previous version is included in the 3rd generation system's capabilities. Also, another problem is that the CIIS 1st and 2nd versions are still running and reports are being generated from them.

These technical issues need to be resolved; the CIIS 3rd generation system needs to be completed, and used on its own. This will enable the EPTC to stop running the 1st and 2nd versions which are duplicating efforts, reports generation and costs. It will also help the Integrated Consumption/Distribution MIS to be sustainable in the future. Please advise as soon as these activities are completed.

USAID will work directly with the managerial issues.

This milestone has not been met. USAID will not consider it completed until the CIIS 3rd generation is running on its own without any problems, and the 1st and 2nd generations are no longer needed.

Sincerely,

Brenda Doe

Brenda Doe
Cognizant Technical Officer

Egyptian Pharmaceutical Trading Co.

MEMORANDUM

Date: 12/11/01

From: Dr. Mohammed Abdel Azim / Chairman of the Board / EPTC

To: Dr. Brenda Doe / USAID Cognizitant Technical Officer

CC: Dr. Yahia El Hadidi / MOHP Population Sector / Undersecretary
Mr. Tourhan Noury / USAID Program Officer
→ Mr. Jestyn Portuguill / Pathfinder / Chief of Party ←
Mr. Mohsen Embaby / Processing Manager / EPTC

Subject: New CIIS requirements for improvement

Dear Dr. Brenda, it was a pleasure meeting you yesterday and to have had an opportunity to share with you the new version of the CIIS that we have developed in-house. Today, after 6 months of testing of the new CIIS, we are comfortable to say that it meets all the reporting requirements of the old system, and 100% of reports match.

We have developed the New CIIS using Sybase/Powerbuilder, which is a state of the art technology. Therefore, we are in need of upgrading several aspects in order to ensure proper functioning of the New CIIS.

As per your request, we have prepared with Mr. Luigi the following list of requirements:

Hardware

1 File Server PC
1.5 Ghz CPU
256 RAM
100 Gegabyte IDE Hard Drive
3.5 Floppy Disk Drive
CD-ROM Drive
CD / RW Drive (for Backing up historical data)
14" Monitor
10/100 Base T NIC (3 COM)

5 Workstation PCs
1.5 Ghz CPU
256 RAM
30 Gegabyte Hard Drive
CD-ROM Drive
17" Inch Monitors

10/100 Base T NIC (3 COM)
Preloaded with Win 2000

1 3-COM Switch (24 connections)

1 Router (3COM for branch connection)

1 Ink Jet HP Color Printer

1 HP Laser Printer (5SI) with Network Interface Card (NIC)

1 Dot Matrix Printer (EPSON DFX 5000)

Warehouse Ink Jet Printer

Sofware

Sybase Adaptive SQL Server ver. 12 (5 licences)
Powerbuilder 7.0
Microsoft Windows 2000 Server

Training

English Language Training for 12 persons
Developing OOP with Powerbuilder
Fast Track to Replication Server Administration
Sybase Adaptive SQL Server Administration
Advanced Sybase SQL Administration
Data Modeling with PowerDesigner
Windows 2000 Server Administration

The above requirements is a minimum that will greatly enhance the CIIS operations. We estimated with Mr. Luigi the cost to be between 10 to 15 thousand dollars. Please let us know if you require further information. We are always thankful for USAID's assistance and cooperation.

Sincerely Yours,

Dr. Mohammed Abdel Azim
Chairman of The Board / EPTC

A. Mohamed Ammar

A.G.H. Osman

Milestone 7.1

MILESTONE COMPLETION REPORT
CONTRACT NUMBER: 263-C-00-99-00017-00

To: Brenda Doe
Cognizant Technical Officer
USAID Mission to Egypt

CC: Gary V. Kinney
Director, Contracts Division
USAID Mission to Egypt

From: Jestyn Portugill
Chief of Party / Population / Family Planning IV of Egypt

Date: July 15, 2001

Task No:	7
Task Description:	Contraceptive Procurement and Logistics Management Systems fully funded by the GOE with Pricing Rationalized
Milestone No:	7.1
Milestone Description:	Logistics Management MIS integrated with services MIS
Sources of Verification:	MOHP Records
Planned End Date:	1/2000
Status:	Completed
Comments:	

The Integrated Consumption / Distribution MIS (ICDMIS) has been designed to provide executive managers at the Ministry of Health and Population of Egypt with the capability to generate comparative analysis and reports based on both contraceptive distribution data managed by the Egyptian Pharmaceutical Trading Company (EPTC) and consumption of contraceptives data managed by the MOHP's System Development Project (SDP).

TABLE OF CONTENTS

1. Milestone Objectives

2. Implementation Activities

3. Chronogram of Events

Appendix I. Integrated Consumption/Distribution System's User's Guide

Appendix II. Linking Data Sources Training Curricula and Programmer's Guide

Appendix III. Integrated Consumption/Distribution System – Presentation

Appendix IV. Memorandum to Dr. Yahia – Delivery of System to the MOHP

Appendix V. Original Integrated Consumption/Distribution System Design

Appendix VI. Relevant Memorandums and Emails

Appendix VII. Assessment of EPTC's CIIS

Appendix VIII. Design for enhanced Client System

1. MILESTONE OBJECTIVE

The Systems Development Project (SDP) of the Ministry of Health and Population (MOHP) of Egypt has developed an effective information system to monitor activities of the Ministry's family planning program and to assist executive directors at the MOHP to guide the program towards achieving the government's targets of fertility and national population goals.

The information system is comprised in broad terms of two main modules, one which captures client level data on amounts of commodities consumed by users, and another module which captures amounts of commodities distributed through the network of regional warehouses of the Ministry of Health and Population.

Both systems are well managed and are providing relevant information on time. Consumption information is processed through the Client Module managed by the MIS staff at the SDP/MIS unit. On the other hand, distribution data is processed by the Commodities Inventory Information System (CIIS) managed on behalf of the MOHP by the Egyptian Pharmaceutical Trading Company (EPTC).

Prior to the completion of this milestone, there was no tool in place for bringing both sets of data together. This milestone's objective was therefore to bring together consumption and distribution data and to provide a variety of reports that will allow for better management of the contraceptive logistics system and to help ensure that the amounts distributed to both the governorate and district levels are in-tuned with the amounts reported as consumed. This is not to say that both amounts should be equal, but within reasonable levels including additional amounts destined for maintaining proper levels of buffer stock throughout the logistics pipeline.

The system was developed using Powerbuilder/Sybase, a relational database platform that expands the analytical and reporting capabilities to high new levels.

Today the system generates a variety of reports allowing managers to view data in multiple dimensions with just the click of a mouse button. A user can fast retrieve trends in consumption, distribution, separately or combined for each governorate, for all governorates combined (national level), for one method, or for all methods combined, and for any specified period of time. In addition, the system provides breakdown reports, zeroing in on the details of both consumption and distribution.

2. IMPLEMENTATION ACTIVITIES

During the beginning stages of the Family Planning and Population IV project, technical assistance in contraceptive logistics management information systems was being provided by a team of Information Technology experts

from the Center for Disease Control (CDC/Atlanta) and therefore the development of this tool was to be implemented with the close coordination of this team. It was agreed early in 1999 (see chronogram of events for details – Section 3) that Pop IV will generate a design of the system which will be used by the team from CDC to program it.

Because of funding limitations CDC was unable to participate in this activity, and the system was then designed and programmed by Pop IV's MIS advisor Mr. Luigi Jaramillo with the participation of the MIS staff at the SDP.

A beta version of the integrated MIS was completed in July 2000, presented to USAID and the MOHP staff for feedback. The feedback received during the presentation lead to an expansion of the system in order for the MIS to generate not only governorate level reports, but also district level reports.

The new capabilities were built, and the system was ready for testing in September, 2000. The system has been tested for a period of one year, and today, t he system has successfully linked data for 12 months from both consumption and distribution modules. Both the SDP and the EPTC MIS units have developed their own procedures for generating sets of data for integration and have been submitting their respective sets of data on time and as per previous agreement.

The integrated consumption/distribution system has been fully documented. A user's guide (Appendix I) providing step by step instructions on how to access reports has been developed and distributed in hard and soft copies to the SDP/MIS staff. In addition, a programmer's guide (Appendix II) was developed and training for the SDP/MIS staff was provided on several occasions so that the skills required to link sets of data from different systems and formats are built within the Ministry.

The system documentation and software has been delivered to the SDP including all the source code. The SDP/MIS staff has been trained in Sybase and Powerbuilder programming and is now capable of maintaining and improving the system as needs arise. Building in-house capacity to maintain and build systems within the SDP/MOHP was the main focus of the MIS Implementation plan during the first year of Pop IV.

The installation of the system at the MOHP/SDP MIS unit was delayed until the arrival of the computer equipment and software procured through Pop IV. With their arrival on July 2001, the integrated consumption/ distribution system has been installed at the MOHP/SDP computer center and Pop IV will work closely with the center's staff in monitoring their linkage activities during the remaining of the project.

Finally, because the quality of data generated by the integrated consumption/distribution system is highly dependent on the quality of the data from both the client system and the CIIS, technical assistance was provided for strengthening both systems. Included in this document is the design for the

new Client System, and an assessment with recommendations for improving the CIIS (Appendix VII, and VIII respectively).

3. CHRONOGRAM OF EVENTS

The sequence of events leading to the development and implementation of the integrated consumption/distribution system are listed in the following table:

Activity	1999				2000				2001				2002	
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
1. System design completed and submitted to USAID, CDC, and MOHP for review		** (4/22/99)												
2. First prototype programmed and presented to USAID and MOHP	[redacted]													
3. Feedback received and system completed for testing							* (9/2000)							
4. First set of data for first six months of 2000 successfully linked	[redacted]													
5. User's Guide completed							* (10/2000)							
6. Training curricula and programmer's guide completed	[redacted]													
7. First training for programmers on linking data sources implemented										* (1/2001)				
8. Second hands-on training for programmers on linking data sources implemented	[redacted]													
9. Computers equipment and database software delivered											* (7/2001)			
10. System installed at the MOHP on new computers	[redacted]													
11. Third training for programmers on linking data sources implemented											* (7/2001)			
12. System documentation and files, including source code delivered to the MOHP	[redacted]													

APPENDIX I. INTEGRATED CONSUMPTION/DISTRIBUTION SYSTEM'S USER'S GUIDE

TABLE OF CONTENTS

I. Integrated Consumption / Distribution MIS Objectives

II. How Does it Work?

III. The ICDMIS – Main Window

IV. System Maintenance

V. Data Entry

VI. Reports

I. INTEGRATED CONSUMPTION / DISTRIBUTION MIS OBJECTIVES

The Integrated Consumption / Distribution MIS (ICDMIS) has been developed as part of the milestones and deliverables under USAID's funded Family Planning and Population IV project of Egypt. Particularly, the ICDMIS responds to Milestone 7.1 "Logistics management MIS integrated with services MIS".

The ICDMIS has been designed to provide executive managers at the Ministry of Health and Population of Egypt with the capability to generate comparative analysis and reports based on both contraceptive distribution data managed by the Egyptian Pharmaceutical Trading Company (EPTC) and consumption of contraceptives data managed by the MOHP's System Development Project (SDP).

The system has been developed under Powerbuilder/Sybase development platform, expanding the analytical capabilities to high new levels, allowing managers to view data in multiple dimensions with just the click of a mouse button.

The user can fast retrieve trends in consumption and distribution, separately, or combined for each governorate, for all governorates combined (national program), for one method, or for all methods combined, and for any specified period of time. In addition, the system provides breakdown reports, zeroing in on the details of both consumption and distribution.

The user can use the system find answers to numerous interrogations, such as:

- Where are the commodities for the MOHP coming from?
- Who are the main sources of commodities for the MOHP and what are their dimensions in terms of quantities of commodities donated?
- What are the levels of distribution to the governorates by method and how the distribution levels compared to consumption statistics?
- What are the characteristics of the demand for contraceptives in the different governorates? And how do they change through time?
- What are the characteristics of the demand for contraceptives at the national level? And how do they change through time?
- How many CYPs were generated in the country? During a specified period of time? In a specified governorate? Or even, for a specific method?
- What are the stock levels currently or at any time in terms of quantities of contraceptives? By method? By governorate? For the entire program?
- What are the stock levels currently or at any time in terms of number of months of stock
- What are the levels of adjustments? By method? By governorate? Or for all governorates combined? By type of adjustment?

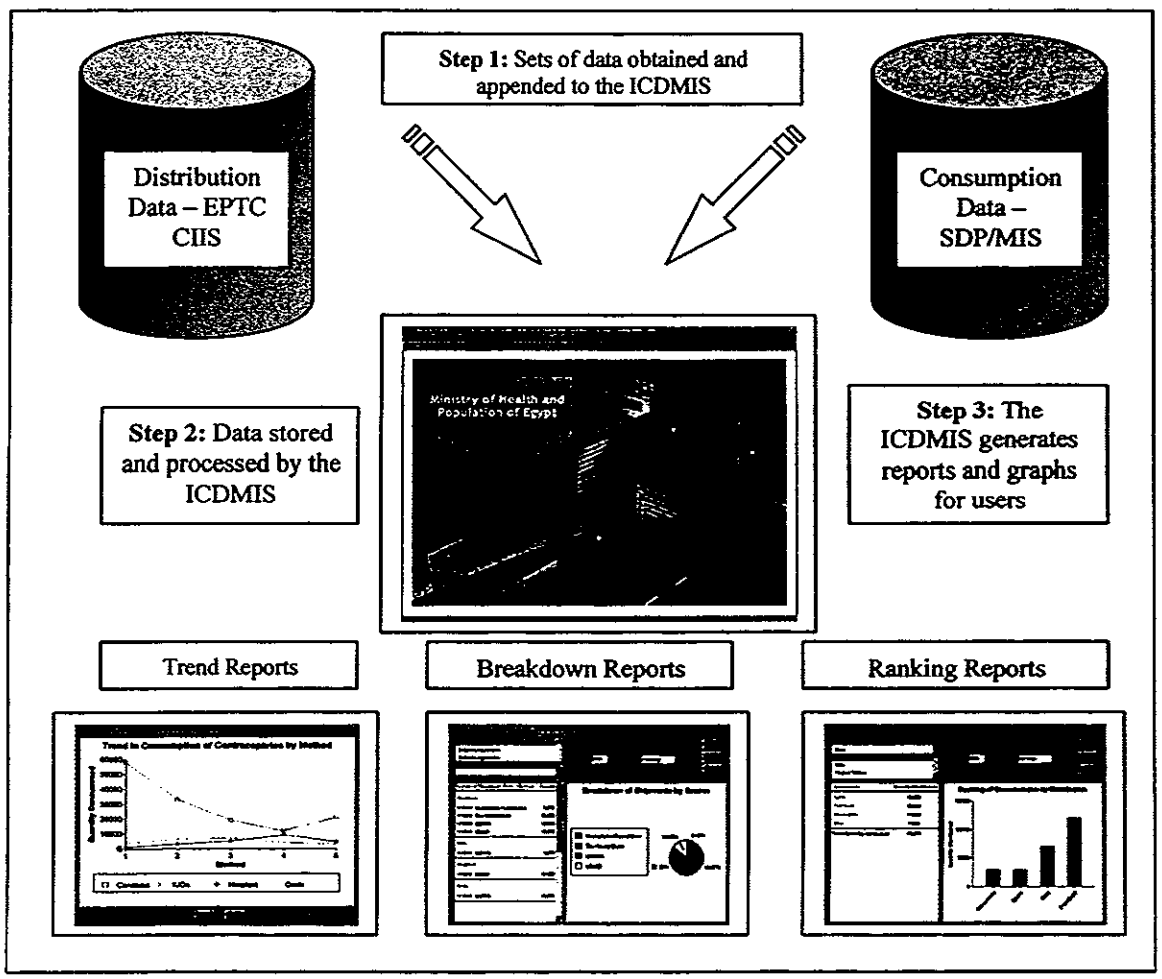
- Are amounts of commodities distributed adequate vis-à-vis amounts of commodities consumed?
- Are there any governorate level warehouses soon to experience shortages? Or currently experiences over-supply situations?

Responses to these questions currently require labor intensive activities by which data sets from different documents are hand entered into a common application such as MS Excel to generate tables, and graphs later produced using a third applications such as MS Powerpoint.

With the new system, both tables and graphs are integrated and complement each other through out the reporting capabilities of the system.

II. HOW DOES IT WORK?

The integrated consumption / distribution MIS works as a hub and filter for both consumption and distribution sets of data. The entire process can be best described with the following chart:

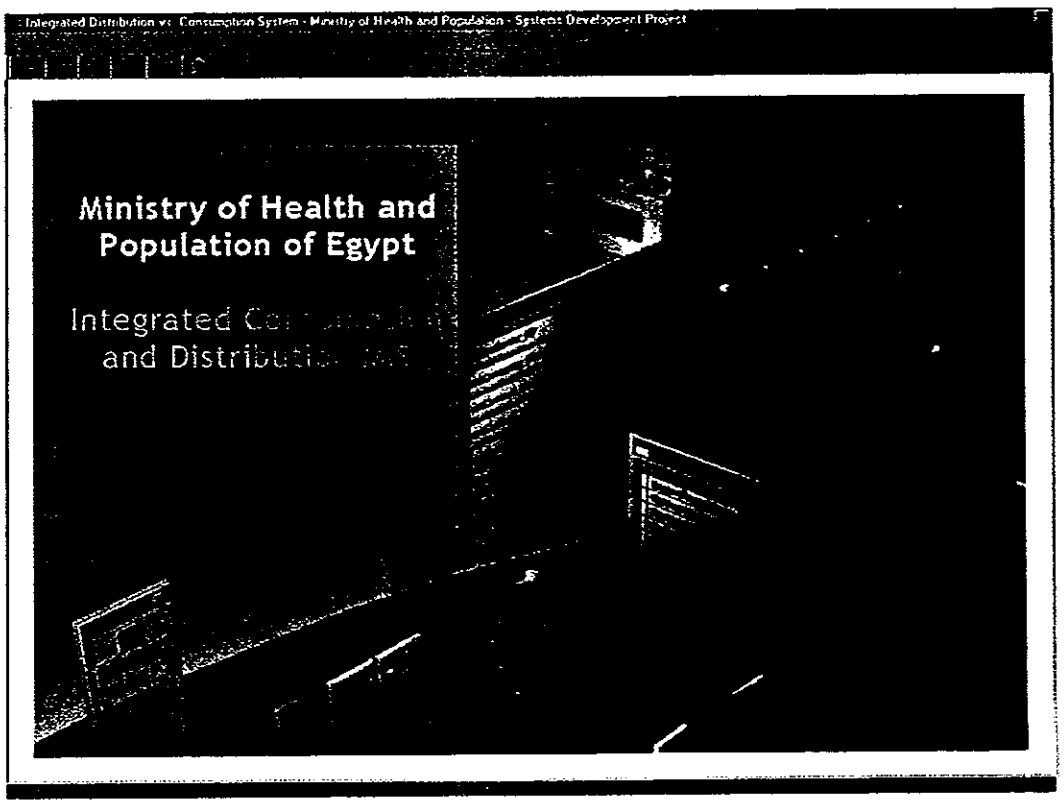


15

One of the main advantages of the system is that it does not replicate efforts. Data is flowing from two existing systems without the need to develop any new data collection forms or defining new databases. Through a built in linkage process, both sets of data come together (see following section of this report).

III. THE INTEGRATED CONSUMPTION / DISTRIBUTION MIS – MAIN WINDOWS

Once the user double clicks on the ICDMIS icon on their computer desk top, the following main window appears:



Through this window, the user can access any of the main areas of the system. The areas of the system have been arranged through the main Window's menu as follows:

- **File** / System Maintenace: Used to setup the system and modified it as the program changes
- **Data** Entry: Used to receive data sets from the SDP/MIS and from EPTC
- **Reports:** Used to access reports such as trends, breakdown, ranking, and other
- **Help:** Used to access system development information
- **File** / Exit: Used to exit the system

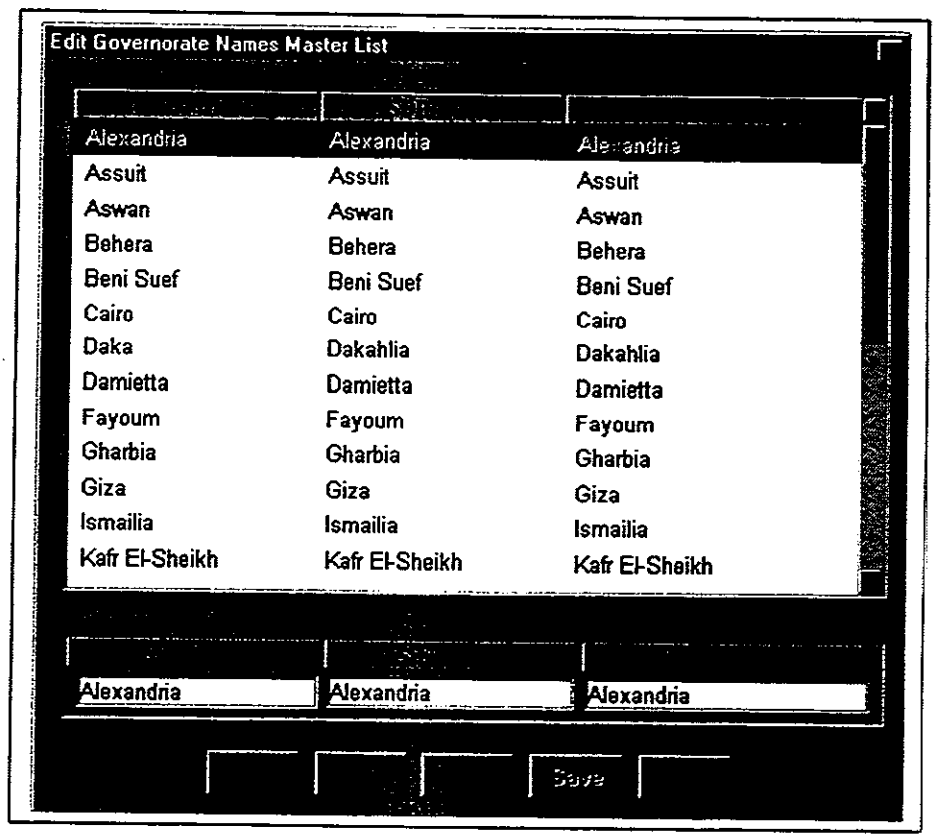
IV. SYSTEM MAINTENANCE

The user uses the system maintenance to set up the system. That is, to tell the system the governorates on which it will operate, the methods it will manage, the brands of methods, and the CYP converstion factors for each method. The system maintenance options allow the system to be expanded to accommodate for example, the inclusion of a new method.

The options under the system maintenance menu selection are described as follows:

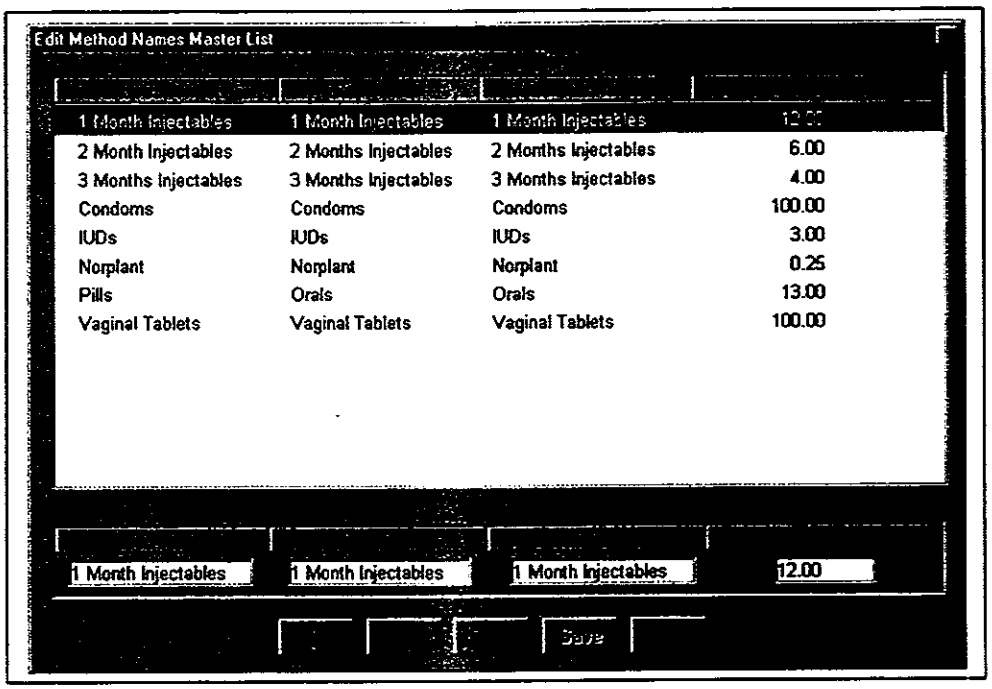
a) File / System Maintenance / Edit Master Governorates Table
b) File / System Maintenance / Edit Master Method Table
c) File / System Maintenance / Edit Master Brand Table
d) File / System Maintnenace / Edit Sources of Commodities

a) By selecting **[Edit Master Governorates Table]** option, the user specifies the governorates names from both sets of data, this will generate the linkage mechanisms, in that way, the system will know that distribution data from Menofia is equivalent to consumption data from Menoufia. The following screen appears:



As described in the previous chart, the user can use this screen to edit names of governorates, delete, or add new names.

b) Through the selection **of [File / System Maintenance / Edit Master Method Table],** the user specifies the methods that will be managed through the system as well as he or she setups the standard naming convention for each method. In that way, the system will know for example that number of cycles of Pills distributed is to be compared with number of cycles of Orals consumed. The following window appears on the screen:

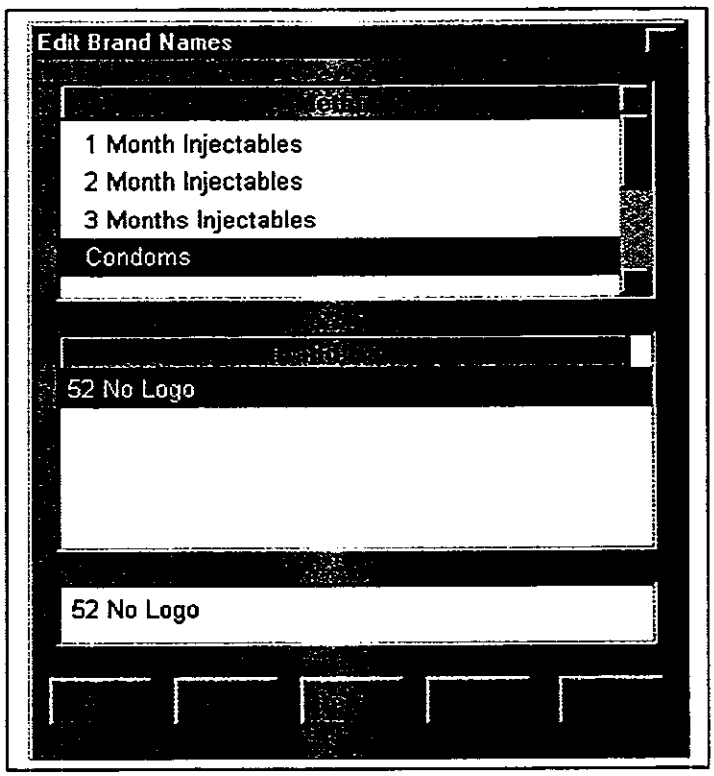


As with the previous window, the user can use this window to edit, add new, or delete methods by just pressing the respective buttons and following the instructions on the screen.

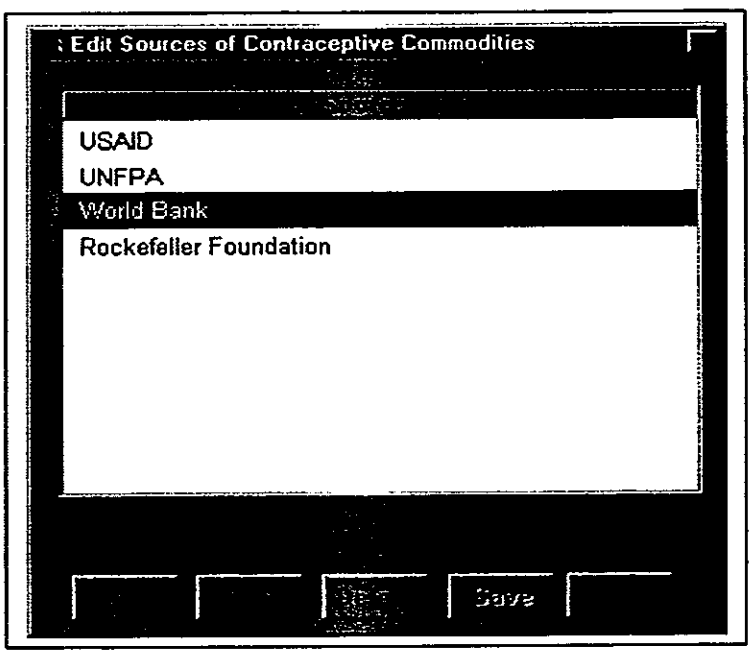
c) [File / System Maintenance / Edit Master Brand Table]. Use this menu selection to tell the system the brands for each one of the methods included in the database.

At the time, only brand data is available for the distribution data set, therefore, the option has been built with the future in mind. Once brand level data is also available to the consumption data set, the system will be ready and in place to accommodate reports that will drill down from methods into brands.

Once the user selects this menu option, the following window will appear on the screen allowing the user to edit existing brands for a specified method, to delete brands, or to add new brands to the current method:



e) **File / System Maintenance / Edit Sources of Commoditeis:** This menu selection allows the user to edit, add new, or delete existing sources of commodities. The user can accomplish these tasks through the following window screen:



V. DATA ENTRY

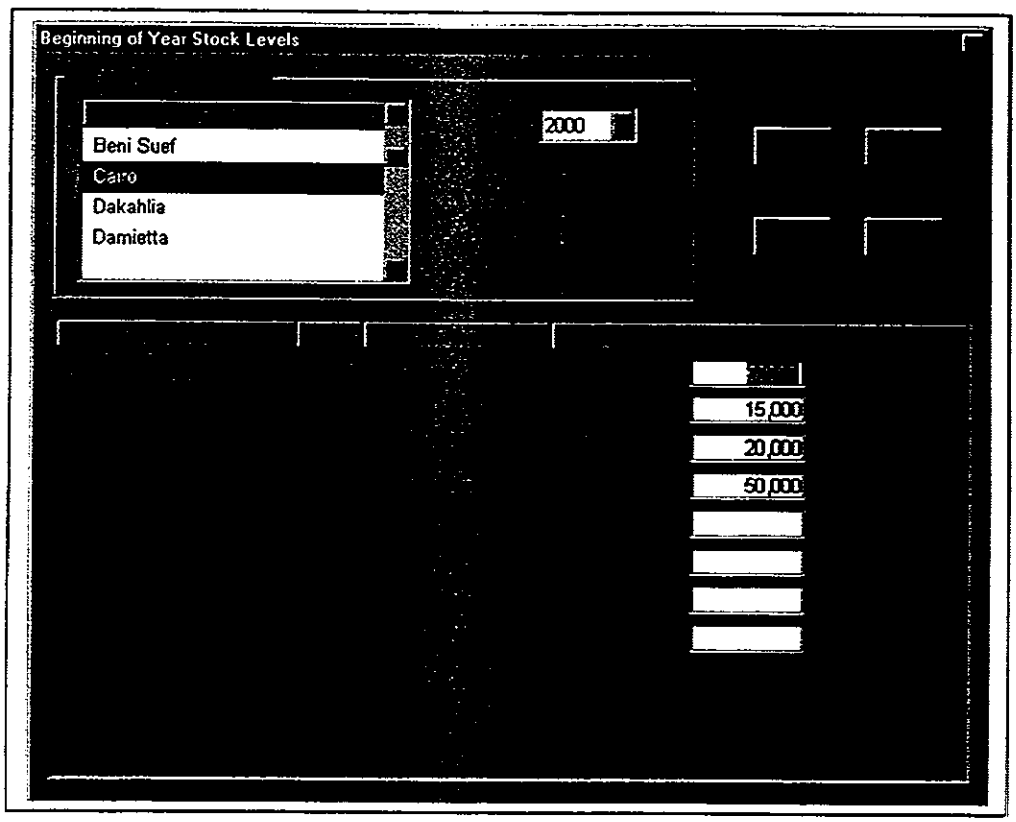
There are three menu selection options under Data Entry as follows:

a) **Receive Distribution Data from EPTC:** By selecting this menu option, the user will follow a wizard on the screen which will append data from drive A: into the ICDMIS.

b) **Receive Data on Incoming Shipments to EPTC from the SDP/MIS:** This option will append data on shipments that have arrived at the EPTC Warehouse targeted for the MOHP/SDP family planning project. Usually USAID's donations are specified through the CPTs.

c) **Receive Consumption data from SDP/MIS:** This menu selection is used to append governorate level monthly consumption data.

d) **Beginning of Year Stock Levels:** Use this menu selection to enter for each governorate warehouse, the beginning stock levels for each method during the first day of the year. This statistics is essential for calculating stocks on hand. The user will be presented with the following window screen:



Any changes are easily updated by pressing the [Save] button.

VII. REPORTS

The reports main window menu selection is in turn subdivided into the following submenu and subsubmenu options:

a) Trends Reports:
   1) Trend in incoming shipments to EPTc
   2) Trend in distribution to governorate warehouses
   3) Trend in incoming vs. outgoing shipments to and from EPTC
   4) Trend in consumption in governorates
   5) Trend in distribution and consumption in governorates

b) Breakdown Reports
   1) Breakdown of incoming shipments by source
   2) Breakdown of distribution by governorate
   3) Breakdown of consumption by governorate

c) Ranking Reports
   1) Ranking of governorates by distribution
   2) Ranking of governorates by consumption

d) Other Reports
   1) Inventory movement detailed report
   2) Method Mix / CYPs generated report

All reports can be accessed by selecting the appropriate menu selection and the following set of reports appear on the screen. In all the reports, the user selects the desired report parameters, and by pressing the [Go] button, the reports appear on the screen as described in the following pages:

a.1) Trend in Incoming Shipments to EPTC– Table

Trend in Incoming Shipments to EPTC's Warehouse

UNFPA
USAID
World Bank
All sources combined

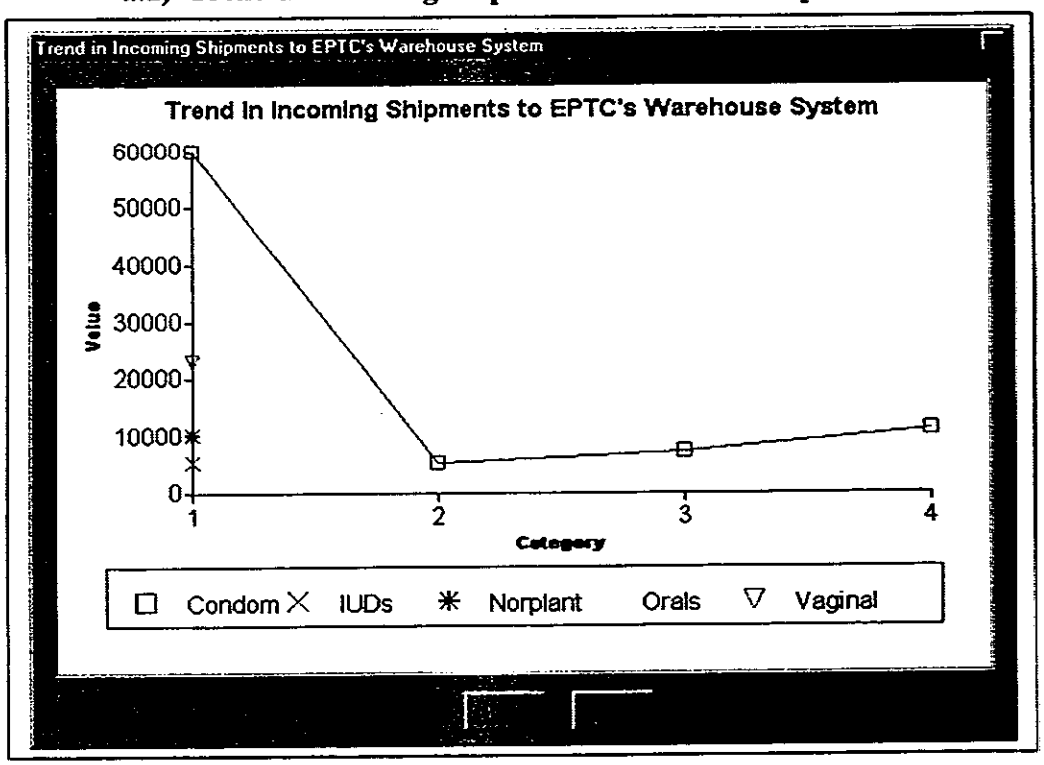
2000

Trend in Incoming Shipments to EPTC

Source Of Shipment	Method	1	2	3	4
Rockefeller Foundati	Condoms	6,000			
The World Bank	Condoms	32,000			
UNFPA	Condoms	12,000			
	IUDs	5,000			
	Orals	10,000			
	Vaginal Tablets	23,000			
USAID	Condoms	10,000	5,000	7,000	11,000

This report is complemented with the following graph:

a.1) Trend in Incoming Shipments to EPTC – Graph



a.2) Trend in Distribution to Governorate Warehouses –Table

Trend in Outgoing Shipments from EPTC's Warehouse

Souhag
South Sinai
Suez
All governorates combined

2000

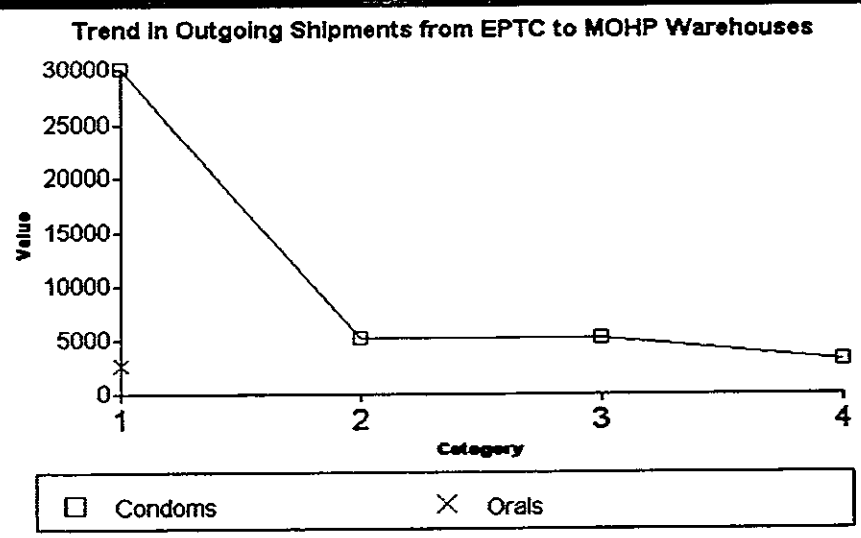
Trend in Outgoing Shipments from EPTC to MOHP/SDP Warehouses

Governorate	Method	1	2	3	4	5
Alexandria	Condoms	1,000	2,000	5,000	3,000	
	Orals	2,500				
Cairo	Condoms	10,000	3,000			
Giza	Condoms	7,000				
Port Said	Condoms	12,000				

This report is complemented with the following graph:

a.2) Trend in Distribution to Governorate Warehouses – Graph

Trend in Incoming Outgoing Shipments from EPTC to MOHP Warehouses



a.3) Trend in Incoming and Outgoing Shipments to and from EPTC – Table

Trend in Incoming & Outgoing Shipments to and from EPTC

2000

Trend in Incoming and Outgoing Shipments to and from EPTC's Warehouse

Method		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
IUDs										
	Received:	5,000	0	0	0	0	0	0	0	0
	Distributed:	0	0	0	0	0	0	0	0	0
	Difference:	5000	0	0	0	0	0	0	0	0
Norplant										
	Received:	10,000	0	0	0	0	0	0	0	0
	Distributed:	0	0	0	0	0	0	0	0	0
	Difference:	10000	0	0	0	0	0	0	0	0
Orals										
	Received:	10,000	0	0	0	0	0	0	0	0
	Distributed:	2,500	0	0	0	0	0	0	0	0
	Difference:	7500	0	0	0	0	0	0	0	0
Vaginal Tablets										
	Received:	23,000	0	0	0	0	0	0	0	0
	Distributed:	0	0	0	0	0	0	0	0	0
	Difference:	23000	0	0	0	0	0	0	0	0

a.4) Trend in Consumption in Governorates –Table

Trend in Governorate Consumption

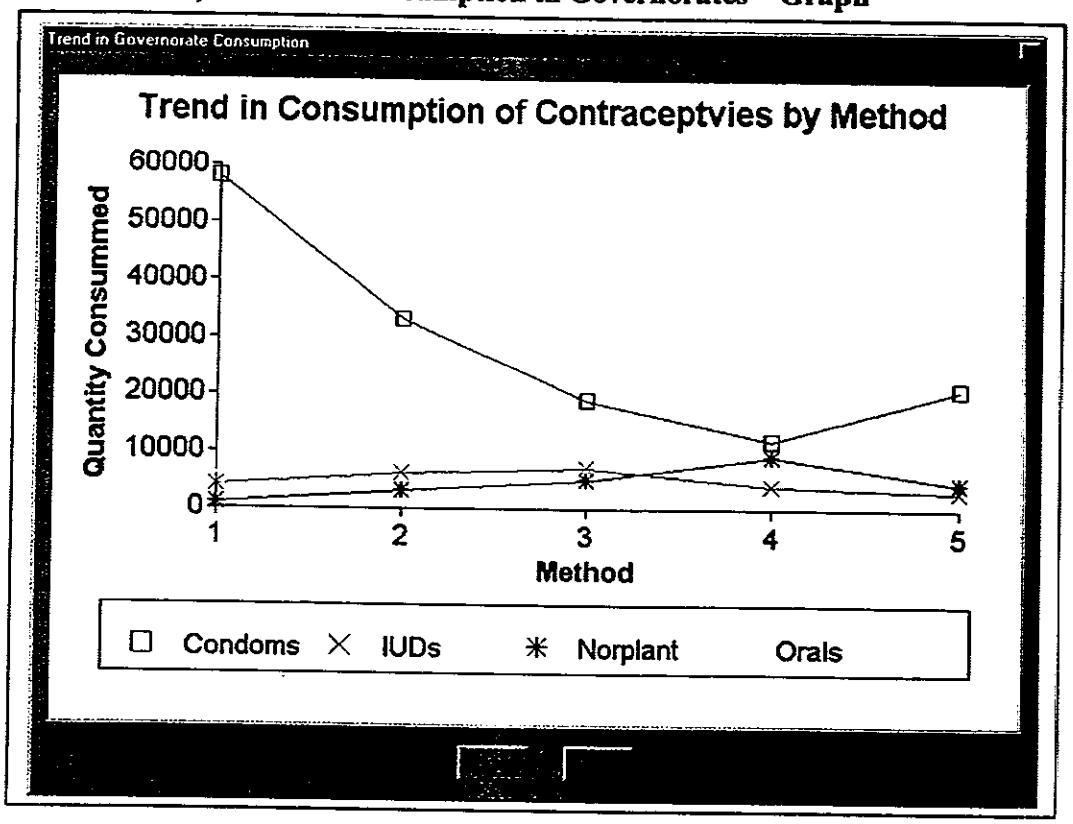
Souhag
South Sinai
Suez
All governorates combined

2000

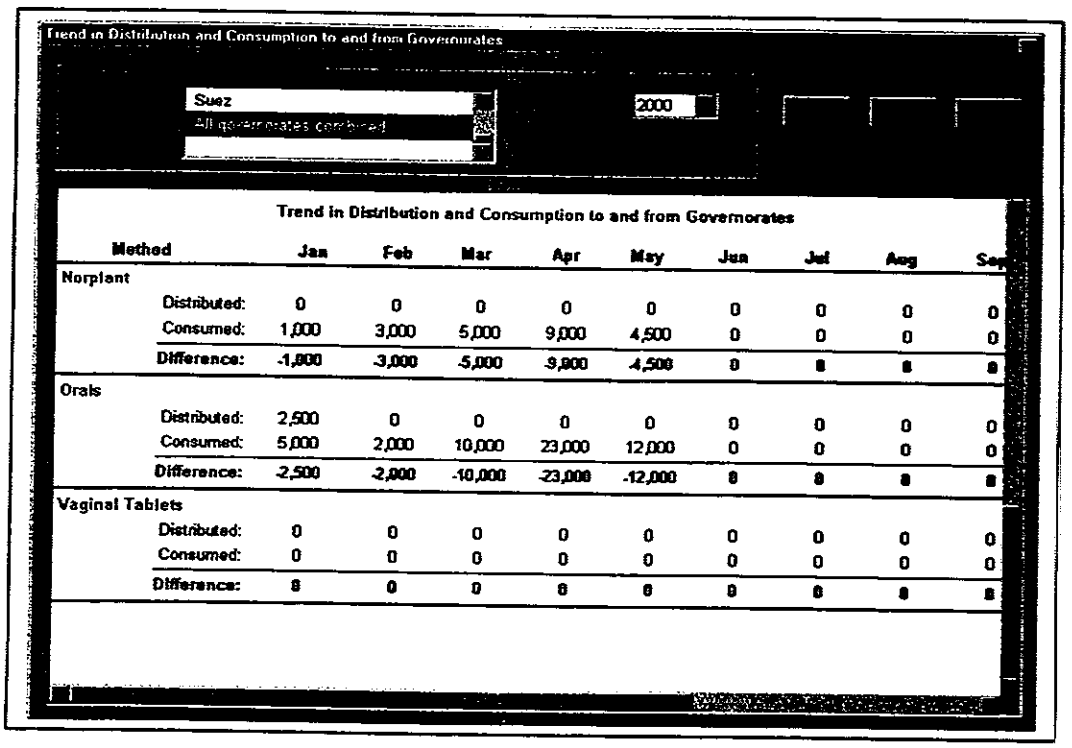
Trend in Consumption by Governorates

Governorate	Method	1	2	3	4	5	Grand Total
Alexandria	IUDs	4,000	6,000	7,000	4,000	3,000	24,000
Cairo	Condoms	35,000	23,000	15,000	10,000	21,000	104,000
	Norplant	1,000	3,000	5,000	9,000	4,500	22,500
	Orals	5,000	2,000	6,000	23,000	12,000	48,000
Giza	Condoms	23,000	10,000	4,000	2,000		39,000
	Orals			4,000			4,000

a.4) Trend in Consumption in Governorates – Graph



a.5) Trend in Distribution and Consumption in Governorates – Table



Trend in Distribution and Consumption to and from Governorates

Method		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Norplant										
	Distributed:	0	0	0	0	0	0	0	0	0
	Consumed:	1,000	3,000	5,000	9,000	4,500	0	0	0	0
	Difference:	-1,000	-3,000	-5,000	-9,000	-4,500	0	0	0	0
Orals										
	Distributed:	2,500	0	0	0	0	0	0	0	0
	Consumed:	5,000	2,000	10,000	23,000	12,000	0	0	0	0
	Difference:	-2,500	-2,000	-10,000	-23,000	-12,000	0	0	0	0
Vaginal Tablets										
	Distributed:	0	0	0	0	0	0	0	0	0
	Consumed:	0	0	0	0	0	0	0	0	0
	Difference:	0	0	0	0	0	0	0	0	0

25

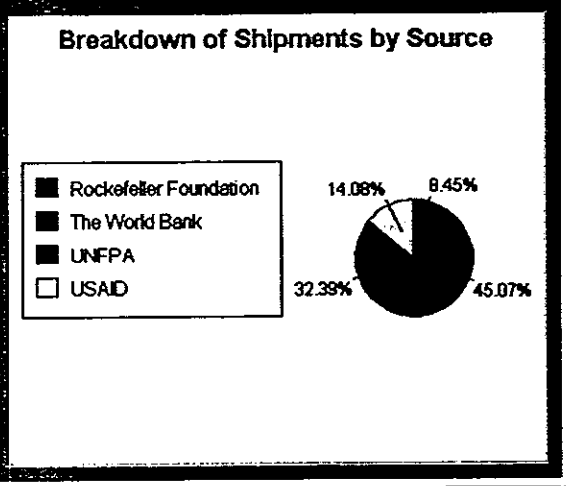
b.1) Breakdown of Incoming Shipments by Source

Breakdown of Incoming Shipments by Source

2 Months Injectables
3 Months Injectables
All methods combined

2000 | All Year

Source of Shipment / Date / Method		Quantity
Condoms		
1 / 2000	Rockefeller Foundation	6,000
1 / 2000	The World Bank	32,000
1 / 2000	UNFPA	12,000
1 / 2000	USAID	10,000
2 / 2000	USAID	5,000
3 / 2000	USAID	7,000
4 / 2000	USAID	11,000
IUDs		
1 / 2000	UNFPA	5,000
Norplant		
1 / 2000	USAID	10,000



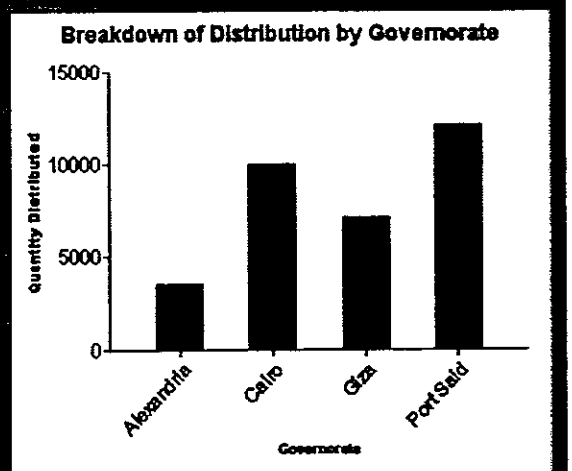
b.2) Breakdown of Distribution by Governorate

Breakdown of Distribution by Governorate

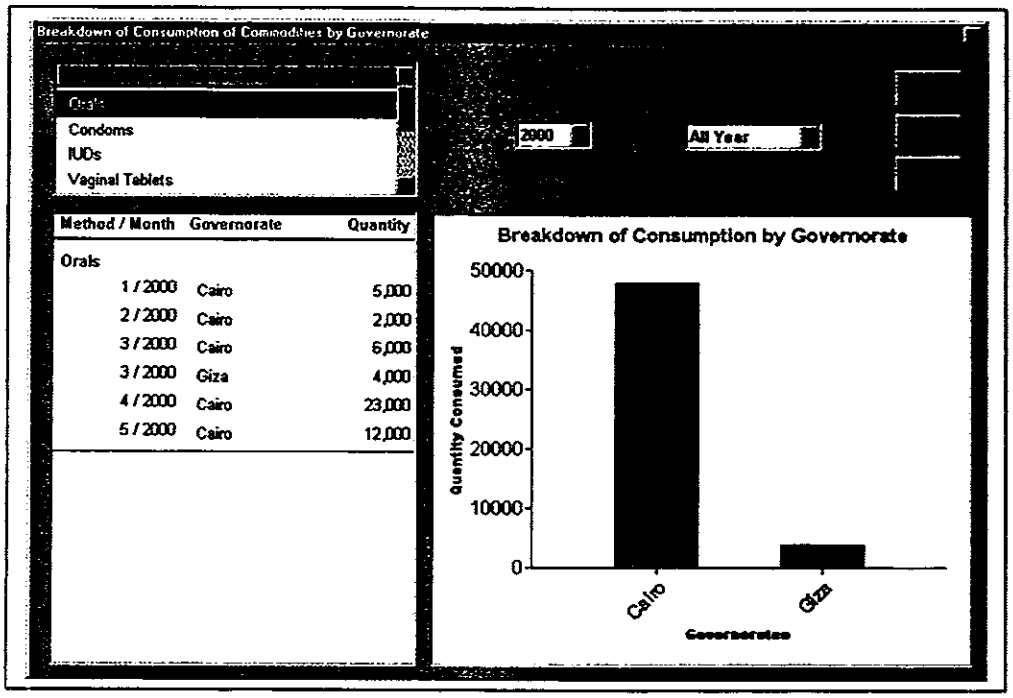
2 Months Injectables
3 Months Injectables
All methods combined

2000 | January

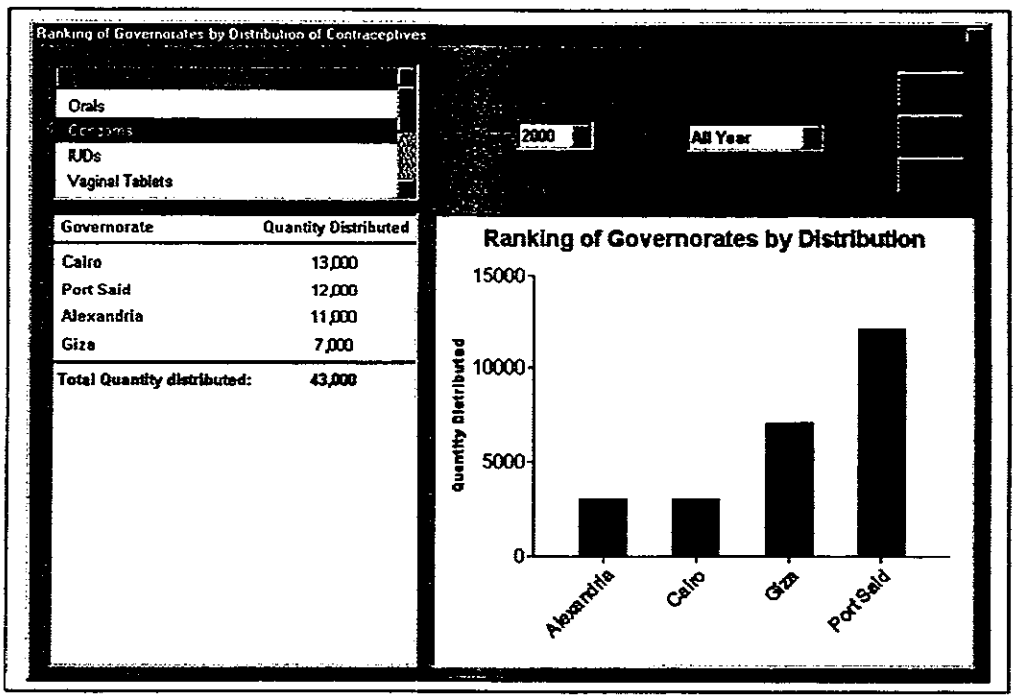
Method	Governorate	Quantity
Orals		
1 / 2000	Alexandria	2,500
Condoms		
1 / 2000	Alexandria	1,000
1 / 2000	Cairo	10,000
1 / 2000	Giza	7,000
1 / 2000	Port Said	12,000



b.3) Breakdown of Consumption by Governorate



c.1) Ranking of Governorates by Distribution



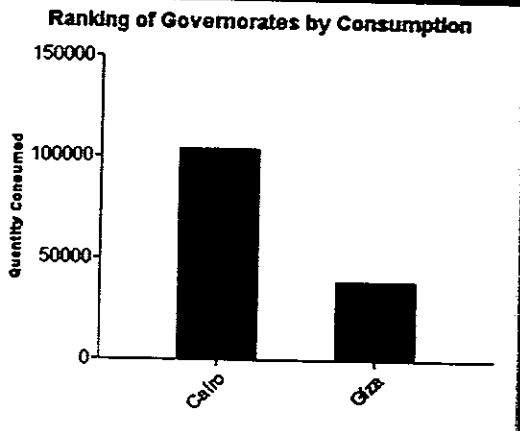
c.1) Ranking of Governorates by Consumption

Ranking of Governorates by Consumption

Orals
Condoms
IUDs
Vaginal Tablets

2000 | All Year

Governorate	Quantity Consumed
Cairo	104,000
Giza	39,000
Total Quantity Consumed:	143,000



d.1) Inventory Report for Selected Governorates

Inventory Report

Souhag
South Sinai
Suez
All governorates combined

2000

Contraceptive Inventory Movement Detailed Report

2000 | All governorates combined | 7/5/00

Method	BOYS	+ Quantity Received	+ / - Amount of Adjustment	- Quantity Consumed	= Current Balance	Average Consumption	Current Balance in Months of Consumption
1 Month Injectables	5,000	0	0	0	5,000	0	
2 Months Injectables	5,000	0	0	0	5,000	0	
3 Months Injectables	55,000	0	0	0	55,000	0	
Condoms	118,000	43,000	0	143,000	18,000	20,429	0.88
IUDs	41,000	0	0	24,000	17,000	3,429	4.96
Norplant	5,000	0	0	22,500	-17,500	3,214	-5.44
Orals	36,000	2,500	0	52,000	-13,500	7,429	-1.82
Vaginal Tablets	5,000	0	0	0	5,000	0	

d.2) Method Mix Report

Method Mix Report

Souhag
South Sinai
Suez
All governorates combined

2000

Method Mix Report (Based on Consumption Data)

All governorates combined

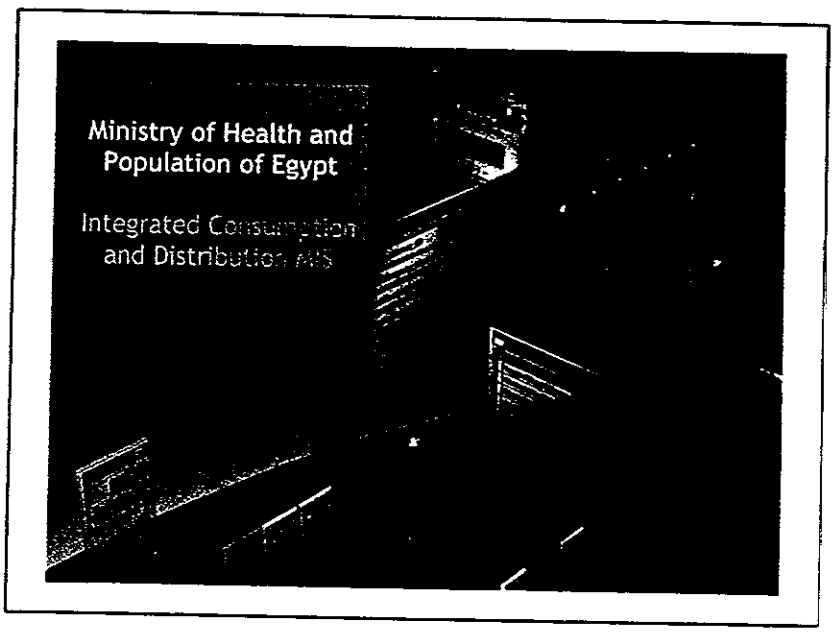
7/5/00

Method	Quantity Consumed	CYP Conversion Factor	Total CYPs	Method Mix
1 Month Injectables	0	12.00	0	0.00 %
2 Months Injectables	0	6.00	0	0.00 %
3 Months Injectables	0	4.00	0	0.00 %
Condoms	143,000	100.00	1,430	10.65 %
IUDs	24,000	3.00	8,000	59.57 %
Norplant	22,500	0.00		0.00 %
Orals	52,000	13.00	4,000	29.78 %
Vaginal Tablets	0	100.00	0	0.00 %
Total:	241,500		13,430	100.00 %

APPENDIX II. LINKING DATA SOURCES TRAINING CURRICULA AND PROGRAMMER's GUIDE

MINISTRY OF HEALTH AND POPULATION OF EGYPT

SYSTEMS DEVELOPMENT PROJECT / MIS, MONITORING AND EVALUATION UNIT



INTEGRATED CONSUMPTION/DISTRIBUTION SYSTEM

PROGRAMER'S GUIDE

MANAGING DIFFERENT DATA SOURCES

Steps used for linking consumption data from the SDP/MIS with distribution data from EPTC's CIIS for the implementation of the Integrated Consumption and Distribution MIS

Prepared by: Luigi Jaramillo / MIS & Contraceptive Logistics Advisor / Population – Family Planning IV Project

Cairo, Egypt, January 2001

TABLE OF CONTENT

I. Presentation Objectives

II. Presentation of the Integrated Consumption and Distribution MIS

a. The System Application
b. The System's Location and files

III. Description of Data Sources

a. Distribution Data (Spreadsheet)
b. Consumption Data (Structured database)

IV. Normalizing Data and Design of Relational Database Model

a. Normalize Distribution Database
b. Normalize Consumption Database

V. Generating the Relational Integrated Consumption and Distribution Database

a. Distribution Data Tables
b. Consumption Data Tables
c. Pipe Line – Demonstration

VI. Appendixes

a. SDP Method Names
b. SDP Governorate Names

I. PRESENTATION OBJECTIVES

The objective of this presentation is to instruct participants on the steps required to bring two sets of different data sources together into a relational database.

In particular, this presentation is geared to the provision of the information and skills required to link together the data coming in a spreadsheet format from the EPTC's CIIS with consumption data coming in a structured database format from the SDP's MIS with the purpose of implementing a system capable of comparing both sets of data in order to enhance planning and decision making for the continuation of managing an effective contraceptive logistics management information system.

Although there are many methodologies available for bringing sets of data together, this presentation focuses only on those steps used for the development of the Integrated Consumption and Distribution System.

II. PRESENTATION OF THE INTEGRATED CONSUMPTION AND DISTRIBUTION MIS

a. System Definition – A Tour
b. System's Location and Files

III. DESCRIPTION OF DATA SOURCES

a. Distribution Data (Spreadsheet)

Contraceptives Disribution From EPTC To MOHP

PERIOD : January - June 2000

GOV : CAIRO

METHOD	MONTH					
	JAN.	FEB.	MAR.	APR.		
ORAL	1,633	5,673	5,824	8,195	6,889	4,956
IUDs	22,000	12,900	6,200	15,250	12,700	11,540
CONDOM	651	610	310	290	56	210
INJECTIONS	12,275	22,050	4,900	25,900	16,000	10,955
VFT	0	0	0	0	0	0
IMPLANT	0	200	0	900	300	700

GOV : ALEXANDRIA

METHOD	MONTH					
	JAN.	FEB.	MAR.	APR.		
ORAL	3,000	3,000	3,100	4,500	150	3,000
IUDs	0	18,000	0	19,500	0	9,000
CONDOM	1,440	3,120	0	1,170	0	0
INJECTIONS	7,000	14,000	0	13,600	0	7,000
VFT	0	0	0	0	0	0
IMPLANT	0	0	0	0	500	0

b. Consumption Data (Structured Database)

Methods.dbf

CODE		GOV_MONTH	GOV_YEAR	PILLS	LOOPS	CONDOMS	CREAMS	TABLETS	METHOD1	INJECT	NOR
01	04	03	PY6	148.00	763.00	1,395.00	0.00	0.00	0.00	660.00	9.00
01	04	04	PY6	157.00	764.00	1,602.00	0.00	0.00	0.00	605.00	6.00
01	04	05	PY6	169.00	761.00	1,738.00	0.00	0.00	0.00	696.00	3.00
01	04	06	PY6	117.00	612.00	834.00	0.00	0.00	0.00	560.00	7.00
01	05	03	PY6	69.00	302.00	585.00	0.00	0.00	0.00	274.00	14.00
01	05	04	PY6	113.00	328.00	1,164.00	0.00	0.00	0.00	400.00	7.00
01	05	05	PY6	143.00	331.00	1,131.00	0.00	0.00	0.00	387.00	0.00
01	05	06	PY6	95.00	305.00	1,212.00	0.00	0.00	0.00	306.00	7.00
01	06	03	PY6	69.00	510.00	3,066.00	0.00	0.00	0.00	226.00	0.00
01	06	04	PY6	68.00	698.00	3,735.00	0.00	0.00	0.00	220.00	0.00
01	06	05	PY6	77.00	590.00	4,020.00	0.00	0.00	0.00	202.00	0.00
01	06	06	PY6	88.00	515.00	3,662.00	0.00	0.00	0.00	264.00	0.00
01	07	03	PY6	483.00	1,024.00	3,381.00	0.00	40.00	0.00	1,152.00	0.00
01	07	04	PY6	558.00	1,041.00	3,279.00	0.00	180.00	0.00	1,140.00	0.00
01	07	05	PY6	534.00	1,051.00	5,907.00	0.00	0.00	0.00	1,267.00	0.00
01	07	06	PY6	513.00	1,059.00	3,624.00	0.00	0.00	0.00	947.00	0.00
01	08	03	PY6	67.00	356.00	975.00	0.00	0.00	0.00	122.00	0.00
01	08	04	PY6	50.00	373.00	1,380.00	0.00	0.00	0.00	110.00	5.00
01	08	05	PY6	65.00	437.00	855.00	0.00	0.00	0.00	139.00	16.00

Districts.dbf

[illegible]	GOV_NAME	DISTRICT
010100	Giza	Giza
020000	Kafr El sheikh	Kafr El sheikh
030000	Kaluobia	Kaluobia
060000	Assuit	Assuit
070000	Beni-suif	Beni-suif
080000	Port said	Port said
090000	Alexandria	Alexandria
100000	Dakahlia	Dakahlia
110000	Sharkia	Sharkia
120000	Fayoum	Fayoum
130000	Qena	Qena
140000	Sohag	Sohag
150000	Menia	Menia
200000	Suez	Suez
210000	Ismailia	Ismailia
150200	Menia	Menia PH2
150500	Menia	Bany mzar
150600	Menia	Matay PH2
150800	Menia	Abo kerkas
140200	Sohag	El maragha
050100	Gharbia	Santa

IV. NORMALIZING DATA AND DESIGN A RELATIONAL DATABASE

a. Distribution Data: The spreadsheet received from SDP needs to be converted into a database. The following chart describes the transition from the current spreadsheet format into what will be the final structure for our table:

From:	To:
CON1600.XLS	**NEWDIS.DBF**
Method Jan Feb Mar Apr May Jun Gov	Rec_id Ship_date Gov Method Quantity

b. Consumption Data: The databases received from the SDP need to be converted as follows:

From:		To:	
CON1600.dbf	**and Districts.dbf**	**Newcon.dbf**	
Code Gov_month Gov_year Pills Loops Condoms Creams Tablets Method1 Inject Nor	Code District Governorate	Code_dist Code_gov Gov_name District Year_month Method Quantity	Gov_code Gov_name Gov_code Dist_code Dist_name

V. CONVERTING DATA FOR THE RELATIONAL DATABASE

a. Generating the Distribution Data Tables

Step 1: Take spreadsheet CIISAID1.WKS and name it DIS16XX OR DIS712XX where XX represents the year of the data; 16 represents data for the months of January to June, and 712 represent the data for the months July to December.
Step 2: Take the new spreadsheet (ex: DIS1600.WKS) and update Gov column (add a column and enter the respective governorate name by hand using the names included in the last page of this document – Appendix A)
Step 3: Set column names as follows: method, jan, feb, mar, apr, jun, gov (for data from January to June) or method, jul, aug, sep, oct, nov, dec, gov (for data from July to December)
Step 4: Clear all lines
Step 5: Convert to database format (.dbf) and name it the same as the spreadsheet (ex: DIS1600.DBF) by saving as format Dbase IV.
Step 6: Ensure all method names are as the ones used for the integrated MIS. Use . REPLACE METHOD WITH "Orals" WHERE METHOD="Pills" (See appendix A of this report for proper names)
Step 7: Ensure all Governorate names correspond to those used by the SDP project. Have SDP Governorates list handy. Use . REPLACE ALL GOVERNORATE WITH "QENA" WHERE GOVERNORATE="KENA"
Step 8: Normalize DIS1600.DBF or DIS71200.DBF into NEWDIS.DBF by running dbase program "TORELATDB16.PRG OR TORELATDB712.PRG" depending on the semester of the data. The database structures for both are as follows:

DIS1600.DBF	NEWDIS.DBF
Method	rec_id
Jan	ship_date
Feb	gov
Mar	method
Apr	quantity
May	
Jun	
Gov	

The torelatdb16.prg is listed as follows:

```
*/ TORELATDB16.PRG
*/ THIS PROGRAM CONVERST EPTC'S EXCEL (SAVED AS DBF)
*/ INTO ANOTHER DATABASE
*/ CALLED NEWDIS.DBF ... CONTAINING ALL DISTRIBUTION
*/ REPORTED BY EPTC
*/ ----------------------------------------------------------------

clear all
```

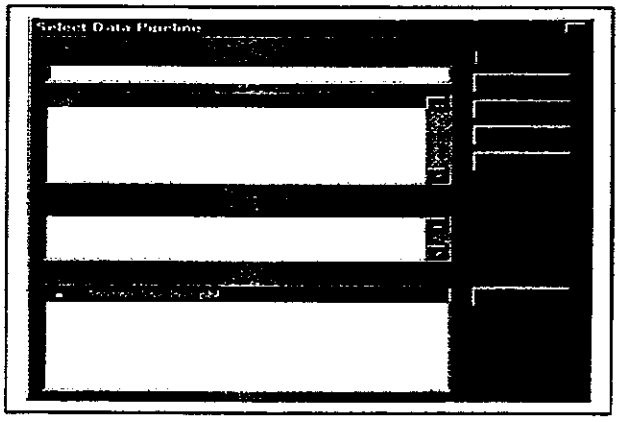
```
select a

use DIS1600

go top

select b
use newdis exclusive
delete all
pack

select a

do while .not. eof()

        gov_nombre=gov
        metodo=method
        qtyone=jan
        qtytwo=feb
        qtytri=mar
        qtyfor=apr
        qtyfiv=may
        qtysix=jun

        select b

        insert blank
        replace gov with gov_nombre
        replace method with metodo
        replace ship_date with "1"
        replace quantity with qtyone

        insert blank
        replace gov with gov_nombre
        replace method with metodo
        replace ship_date with "2"
        replace quantity with qtytwo

        insert blank
        replace gov with gov_nombre
        replace method with metodo
        replace ship_date with "3"
        replace quantity with qtytri

        insert blank
        replace gov with gov_nombre
        replace method with metodo
        replace ship_date with "4"
        replace quantity with qtyfor

        insert blank
        replace gov with gov_nombre
        replace method with metodo
        replace ship_date with "5"
```

```
        replace quantity with qtyfiv

        insert blank
        replace gov with gov_nombre
        replace method with metodo
        replace ship_date with "6"
        replace quantity with qtysix

        select a
        skip 1
enddo
close all
return
```

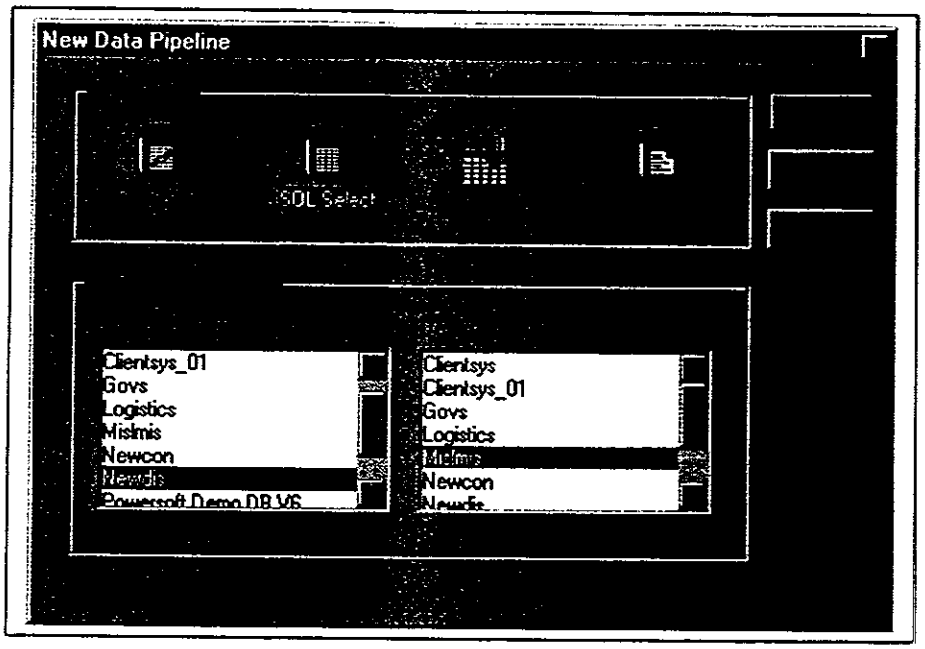
Step 9: Use Powerbuilder's Pipeline painter and bring in NEWDIS.DBF as a table using the following steps:

First call Pipe Line Painter

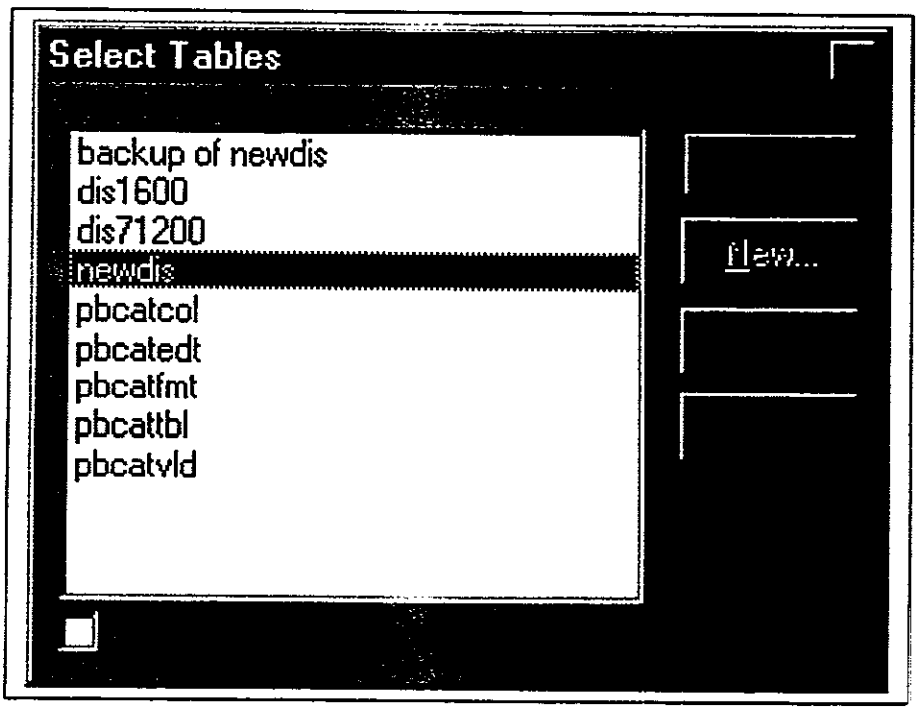
Second: Select New Pipeline Job



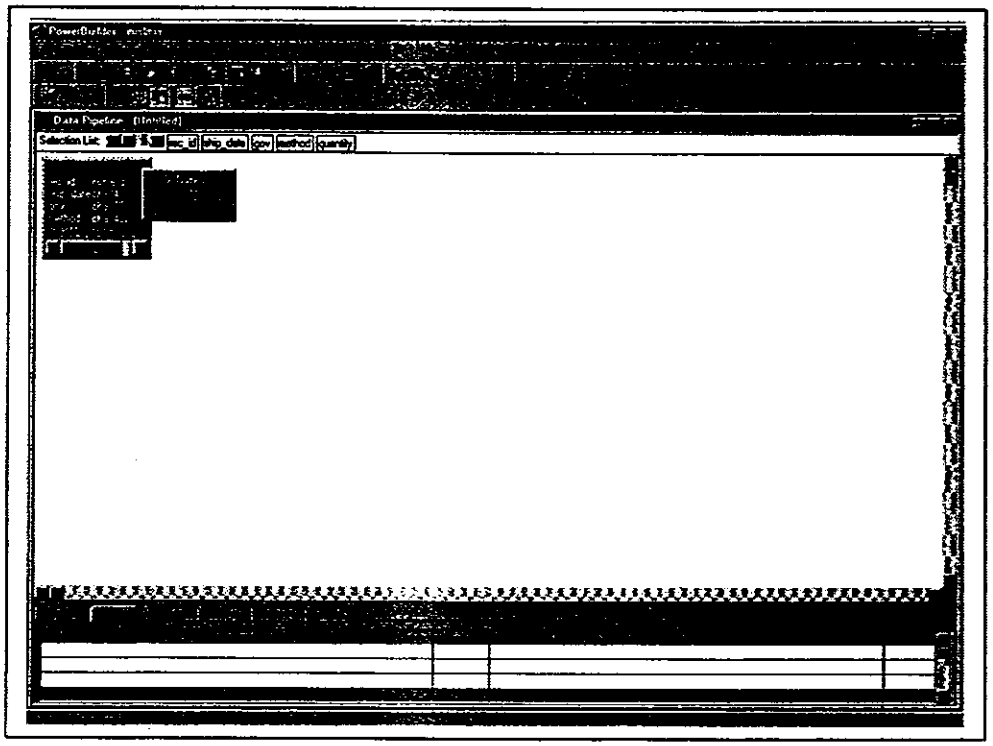
Third: Select Source and Destination – Source: NEWDIS.DBF, Destination: MISLMIS.DB – SQL Select



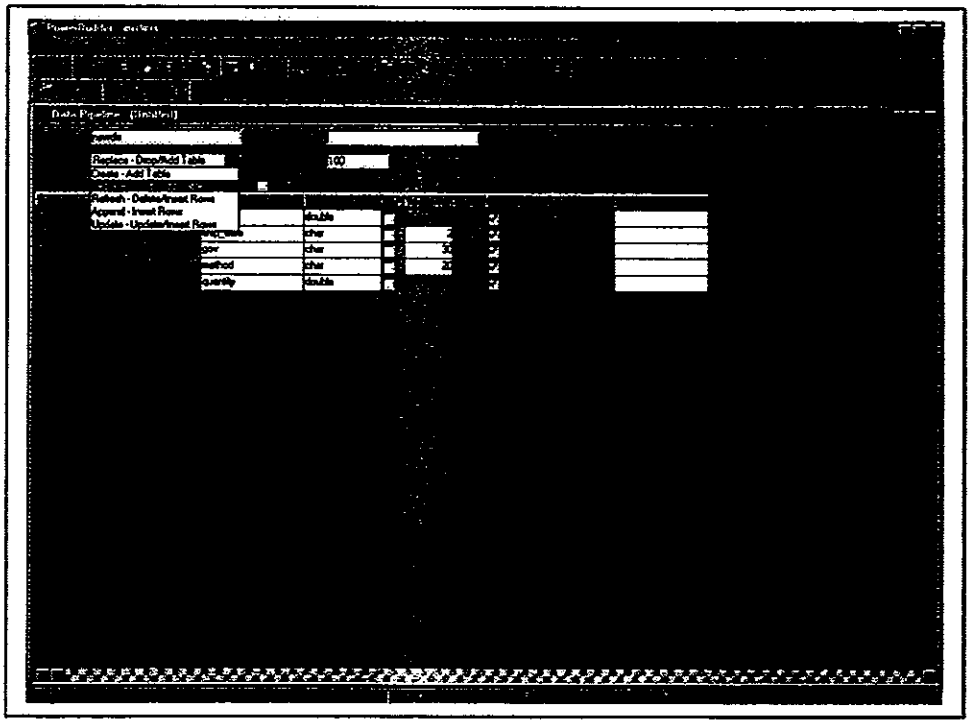
Fourth: Select Table: NEWDIS and press Open



Fifth: Select all fields and Press the SQL button (icon)

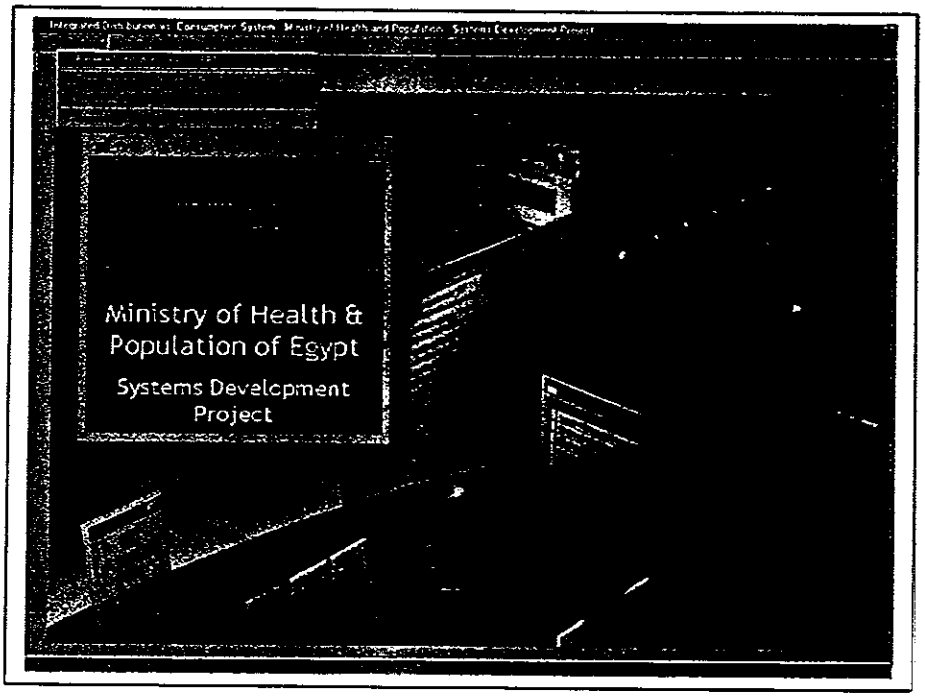


Sixth: Select from Pipeline the Drop/Add option and Execute



The computer will take a few minutes reading and writing the data from the source to the new destination. Upon completion, close without saving the pipeline job. You are now ready for the final step.

Step 10: Once in as a table within MISLMIS.DB, run the procedure under W_APPEND_DIST_EPTC_MIS.



This procedure loads NEWDIS into a datawindow dw_1 and outgoing_shipments table into a dw_2. The structures of both tables are as follows:

NEWDIS	OUTGOING_SHIPMENTS
Rec_id	ship_out_id
Ship_date	shipment_delivery_date
Gov	governorate
Method	method
Quantity	quantity

The procedure is listed below and it is under the command button push event:

```
// Update outoing_shipments table by copying records from dw1 to dw2 –
// make sure you update this procedure before running it to ensure that
// the year will be updated accordingly.

string gc, dc, governo, distrito, metodo, mes, ano, dia
long filas, canti
long prim

prim=1
filas=dw_1.rowcount()

do while prim <= filas

        dw_1.scrolltorow(prim)
```

```
        governo = dw_1.GetItemstring(prim, "gov")
        metodo = dw_1.GetItemString(prim, "method")
        canti = dw_1.GetItemNumber(prim, "quantity")
        mes = dw_1.GetItemString(prim, "ship_date")
        ano = "2000"
        dia = mes+"/01/"+ano

        dw_2.insertrow(0)
        dw_2.scrolltorow(prim)

        dw_2.SetItem(prim, "governorate", governo)
        dw_2.SetItem(prim, "method", metodo)
        dw_2.SetItem(prim, "quantity", canti)
        dw_2.SetItem(prim, "shipment_delivery_date", date(dia))

        prim=prim+1
loop

// now update our good old friend mislmis alias outgoing_shipments table

dw_2.update()
```

- Drop the NEWDIS table when done. No longer needed and will be recreated next semester when the new set of data arrives from EPTC.

b. Generating the Consumption Data Tables:

- Districts and Governorate tables were previously entered into the integrated MIS by hand. This activity has been completed **so no need** to re-update this tables for generating the consumption table. Their structures are as follows:

GOV	District
Gov_code	rec_id
Gov_name	gov_name
Code_gov	district
	Code_gov
	Code_dist

In GOV.DBF, code_gov generated from gov_code by using:
.REPLACE ALL CODE_GOV WITH LTRIM(STR(GOV_CODE, 1,2))

In DISTRICT.DBF, code_gov and code_dist were generated by using:

. REPLACE ALL CODE_GOV WITH LTRIM(STR(REC_ID,1,2))

. REPLACE ALL CODE_DIST WITH LTRIM(STR(REC_ID,3,2))

Step 1: Use METHODS.DBF provided by Mr. Abdel Monem and add two fields for the district and governorate names, label the fields "gov" and "district". The new structure should look like this:

METHODS.DBF

Gov_code
Gov
Dist_code
District
Con_date
Gov_month
Gov_year
Pills
Loops
Condoms
Creams
Tablets
Method1
Inject
Nor

Step 2: Rename the methods.dbf into CON16XX.DBF OR CON712XX.DBF,where XX represents the last two digits of the year of the data.

Step 3: Update the gov and districts fields by running the newname16.prg or the newname712.prg program listed below:

```
*/ newname16.prg
*/ use this program to bring governorate and district names
*/ into the CON16XX OR INTO CON712XX..dbf

clear all

select a
use con1600

select b
use govs

select c
use district

select a
go top
do while .not. eof()

    gc=gov_code
```

```
    dc=dist_code
    select b
    gov_nombre=gov_name
    select c
    locate for code_gov=gc .and. code_dist=dc
    dis_nombre=district
    select a
    replace gov with gov_nombre, district with dis_nombre
    skip 1

enddo

exit
```

Step 4: Now normalize the CON16XX.DBF into a new database called NEWCON.DBF (for new consumption database) by running the TORELATDB16.PRG. The structures of the two databases are listed below to help understanding of the program which follows:

CON16XX.DBF ---------→	NEWCON.DBF
Gov_code	code_dist
Gov	code_gov
Dist_code	gov_name
District	district
Con_date	method
Gov_month	quantity
Gov_year	gov_month
Pills	gov_year
Loops	
Condoms	
Creams	
Tablets	
Method1	

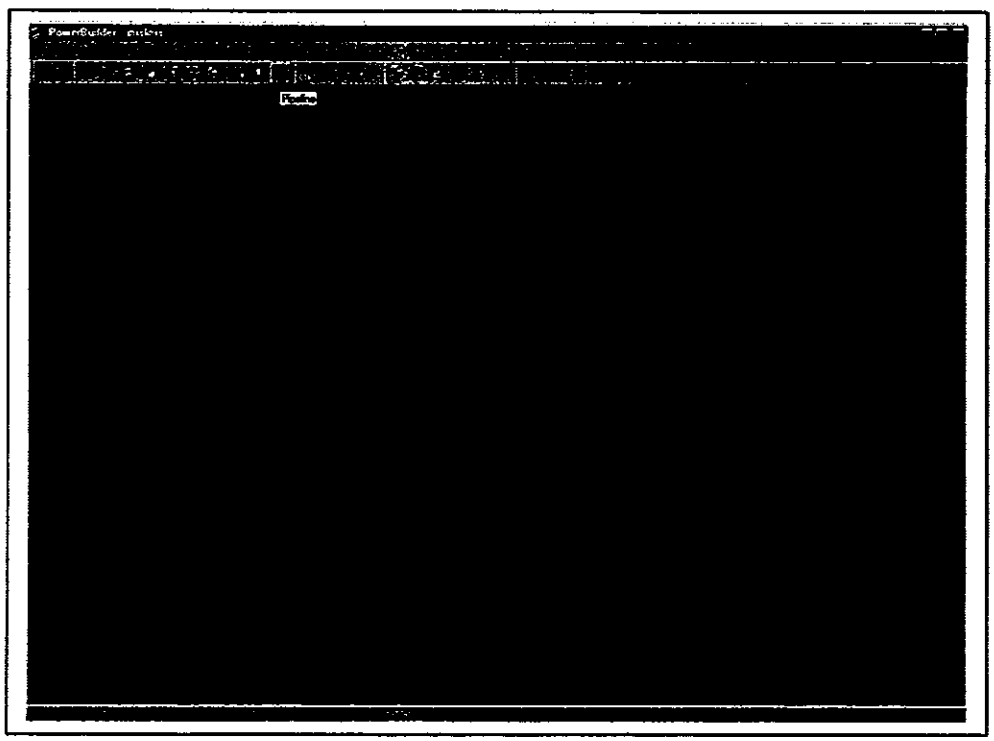
```
* / Torelatdb16.prg
*/  Use this procedure to generate the normalized database
*/  newcon.dbf from CON16XX.DBF.dbf provided by Mr.
*/  Abdel Monem

clear all

select a
use CON1600    * UPDATE THIS LINE FOR RIGHT DATABASE

select b
use newcon exclusive

select a

do while .not. eof()
```

```
cd=dist_code
cg=gov_code
gov_nombre=gov
dis_nombre=district
qpill=pills
qloop=loops
qcond=condoms
qcrea=creams
qtabl=tablets
qinje=inject
qnorp=nor
gmes=gov_month
gyer=gov_year

select b
insert blank
replace code_dist with cd, code_gov with cg
replace gov_name with gov_nombre, district with dis_nombre
replace method with "Orals", quantity with qpill
replace gov_month with gmes, gov_year with gyer

insert blank
replace code_dist with cd, code_gov with cg
replace gov_name with gov_nombre, district with dis_nombre
replace method with "IUDs", quantity with qloop
replace gov_month with gmes, gov_year with gyer

insert blank
replace code_dist with cd, code_gov with cg
replace gov_name with gov_nombre, district with dis_nombre
replace method with "Condoms", quantity with qcond
replace gov_month with gmes, gov_year with gyer

insert blank
replace code_dist with cd, code_gov with cg
replace gov_name with gov_nombre, district with dis_nombre
replace method with "Creams", quantity with qcrea
replace gov_month with gmes, gov_year with gyer

insert blank
replace code_dist with cd, code_gov with cg
replace gov_name with gov_nombre, district with dis_nombre
replace method with "Vaginal Foaming Tablets", quantity with qtabl
replace gov_month with gmes, gov_year with gyer

insert blank
replace code_dist with cd, code_gov with cg
replace gov_name with gov_nombre, district with dis_nombre
replace method with "Injectables", quantity with qinje
replace gov_month with gmes, gov_year with gyer

insert blank
replace code_dist with cd, code_gov with cg
replace gov_name with gov_nombre, district with dis_nombre
```

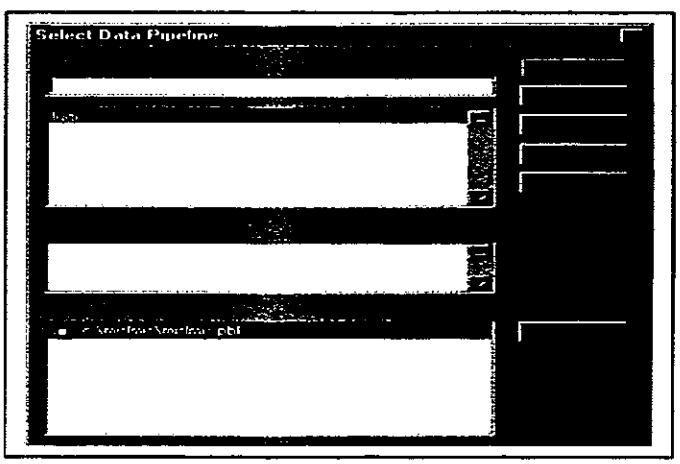
```
        replace method with "Norplant", quantity with qnorp
        replace gov_month with gmes, gov_year with gyer

        select a
        skip 1

enddo

close all
return
```

Step 5: The CON1600.DBF has now been normalized into the NEWCON.DBF. Now use Powerbuilder's Pipeline painter and bring NEWCON.DBF into a table to form part of the MISLMIS.DB file using the following steps:

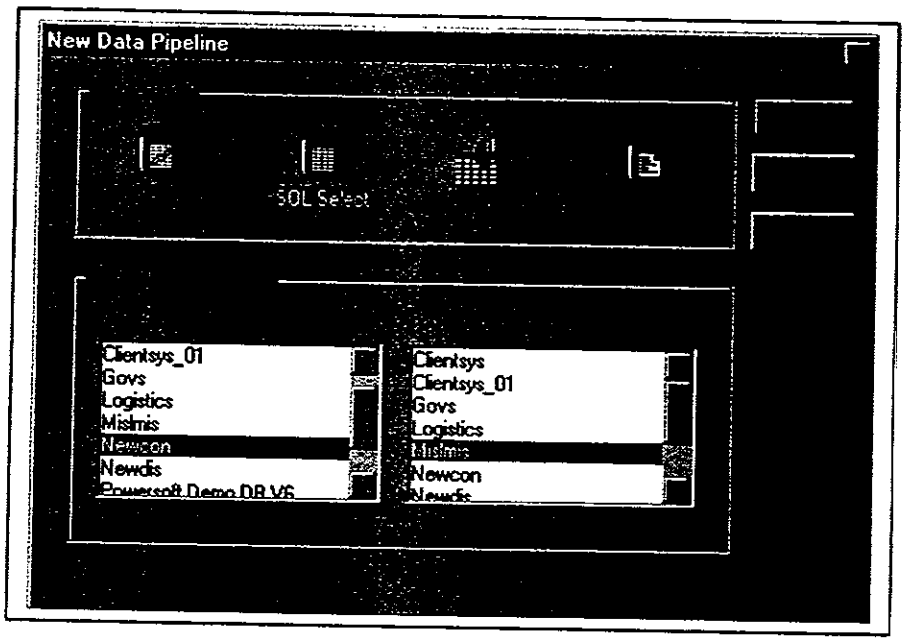
First: Bring up Powerbuilder's Pipeline painter



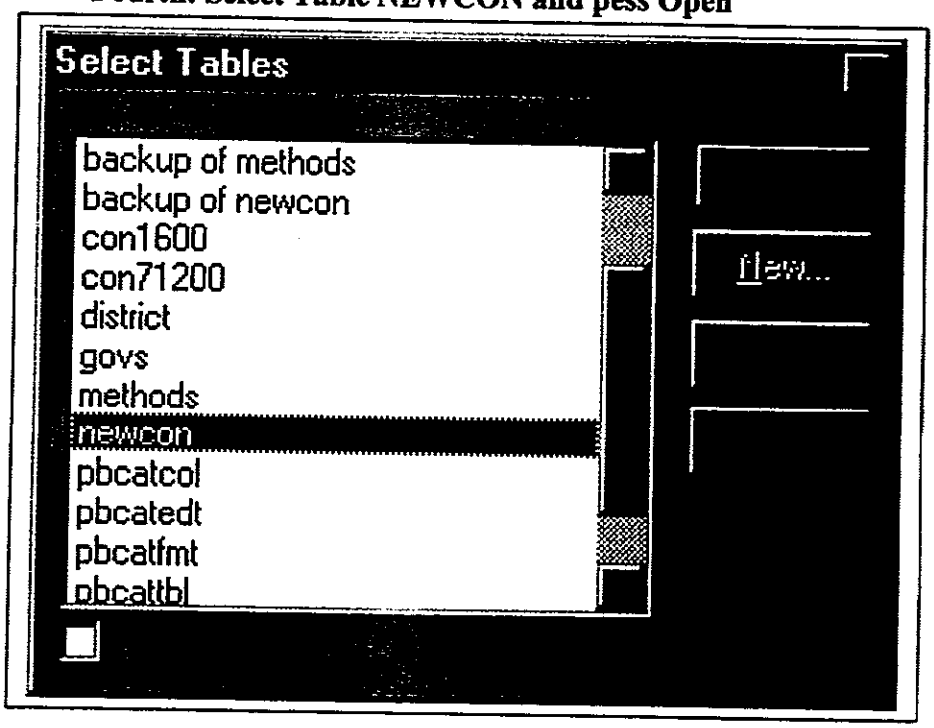
Second: Select New Pipeline Job



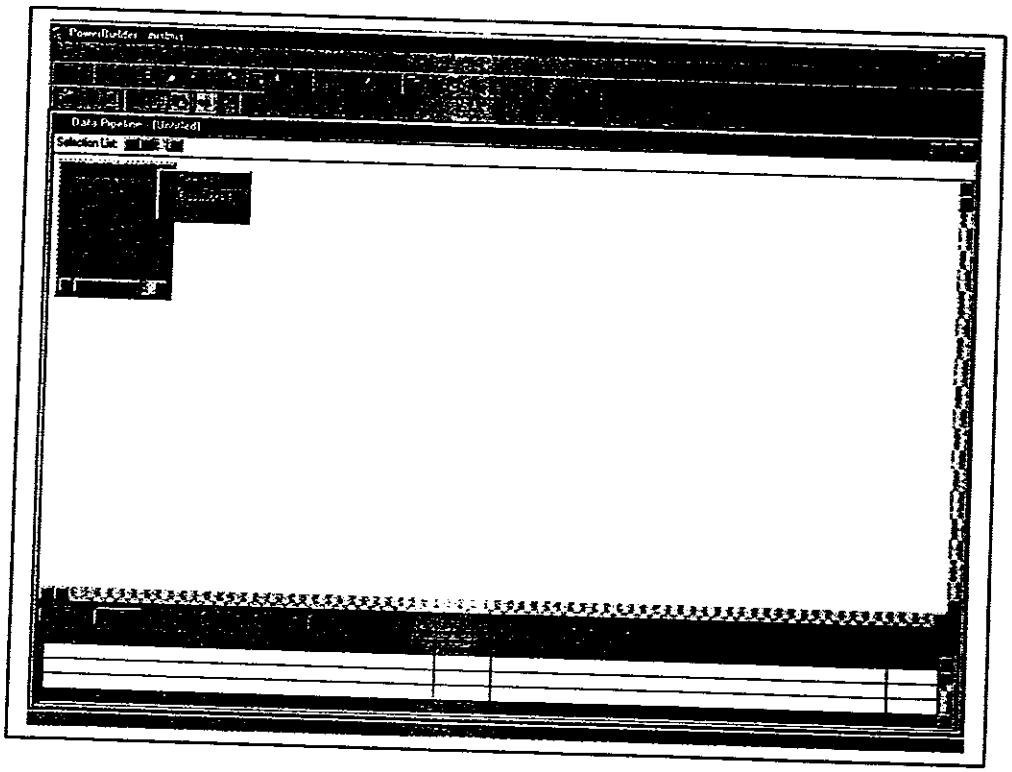
Third: Select Source and Destination – Source: NEWCON.DBF, Destination: MISLMIS.DB – SQL Select



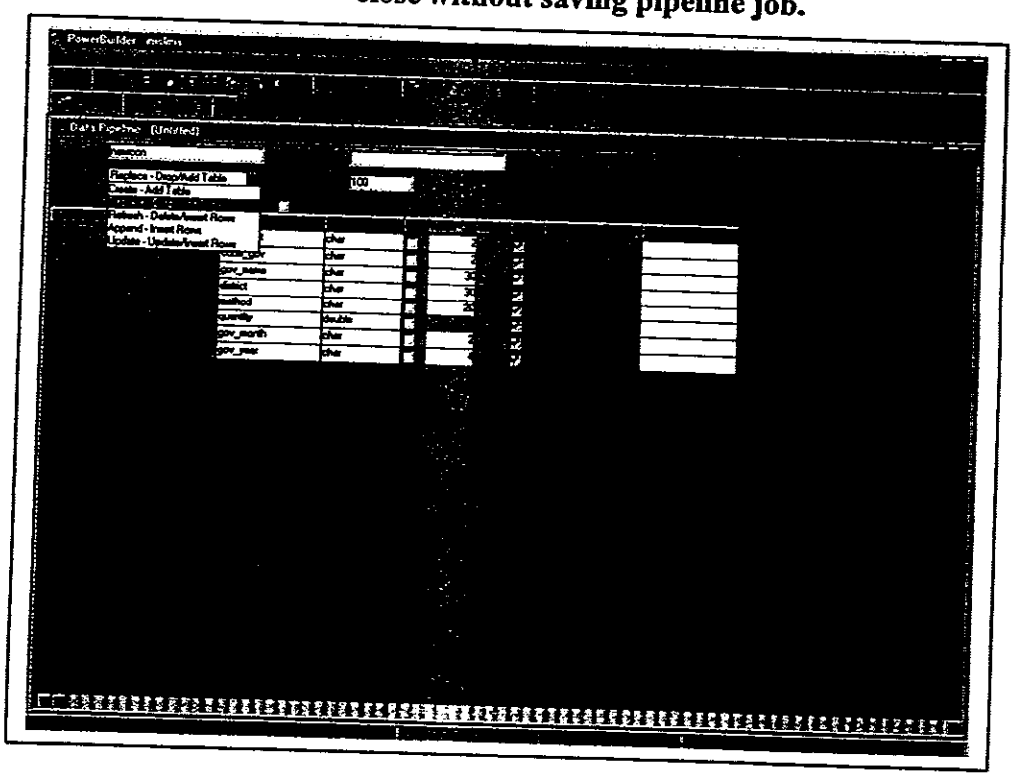
Fourth: Select Table NEWCON and pess Open



Fifth: Select all fields and press the SQL icon/button

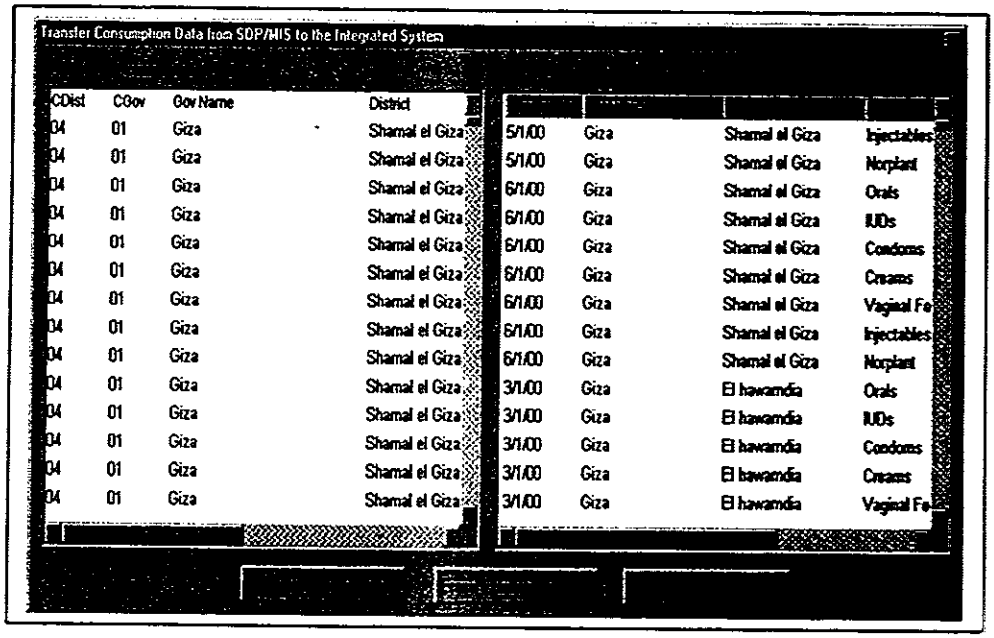


Sixth: Select Drop/Add Table and Execute – Once copied files, close without saving pipeline job.



You are now ready to transfer data into the consumption table:

Step 6: Once the NEWCON.DBF is in as a table within the MISLMIS.DB, run the procedure under W_APPEND_CONSUMP_SDP_MIS.



This procedure loads the NEWCON table into dw_1 and CONSUMPTION table into the dw_2. The table structures for both are listed below to help understand the procedure which follows:

NEWCON	CONSUMPTION
Code_dist	rec_id
Code_gov	month_year
Gov_name	governorate
District	district
Method	method
Quantity	quantity
Gov_month	gov_code
Gov_year	dist_code

The procedure is listed below and it is under the command button push event:

```
// now copy records from dw1 to dw2 – use this procedure to update
// consumption table from newcon piped in from a dBase file. Make
// sure to update the ano field to reflect the set of data being entered.

string gc, dc, governo, distrito, metodo, mes, ano, dia
long filas, canti
long prim

prim=1
```

```
filas=dw_1.rowcount()

do while prim <= filas

    dw_1.scrolltorow(prim)

    gc = dw_1.GetItemString(prim, "code_gov")
    dc = dw_1.GetItemString(prim, "code_dist")
    governo = dw_1.GetItemstring(prim, "gov_name")
    distrito = dw_1.GetItemstring(prim, "district")
    metodo = dw_1.GetItemString(prim, "method")
    canti = dw_1.GetItemNumber(prim, "quantity")
    mes = dw_1.GetItemString(prim, "gov_month")
    ano = "2000"
    dia = mes+"/01/"+ano



    dw_2.insertrow(0)
    dw_2.scrolltorow(prim)

    dw_2.SetItem(prim, "gov_code", gc)
    dw_2.SetItem(prim, "dist_code", dc)
    dw_2.SetItem(prim, "governorate", governo)
    dw_2.SetItem(prim, "district", distrito)
    dw_2.SetItem(prim, "method", metodo)
    dw_2.SetItem(prim, "quantity", canti)
    dw_2.SetItem(prim, "month_year", date(dia))



    prim=prim+1

loop

// now update our good old friend mislmis alias consumption table

dw_2.update()
```

VI. APPENDIXES

a. Method Names:
Condoms, Creams, Injectables, IUDs, Norplant, Orals, Vaginal Tablets

b. Governorate Names:

Alexandria
Assuit
Aswan
Behera

Beni-suif **(Important, this is the correct way by the SDP/MIS)**

Cairo
Dakahlia
Domiat
Fayoum
Gharbia
Giza
Ismailia

Kafr El sheikh **(IMPORTANT! ..this is the correct way by the SDPMIS)**

Kaluobia
Luxor
Matrouh
Menia
Menofia
NEW VALLEY PH2
NORTH SINAI PH2

Port said **(IMPORTANT! Thisis the correct way by the SDP/MIS)**

Qena

RED SEA PH2 **(Important, this is know as EL BAHR EL AHMER at the EPTC MIS)**

Sharkia
Sohag
South Sinai PH2
Suez

APPENDIX III. INTEGRATED CONSUMPTION/DISTRIBUTION SYSTEM – PRESENTATION TO MOHP & USAID

[redacted]

To a Presentation by

Luigi Jaramillo / MIS & Logistics Advisor,
Pathfinder International

October 2000

Integrated Consumption & Distribution System

[redacted]

Ministry of Health and Population of Egypt

Population & Family Planning Sector
Systems Development Project

Presentation Objective

- Demonstration / Working Session to review the first prototype of the Integrated Consumption & Distribution System.
- Present the usefulness of the system as a tool for enhancing contraceptive logistics management through ongoing monitoring of distribution and consumption data.

Presentation Agenda

- Task 7 - Milestone 7.1
- Integrated Consumption & Distribution System - A general system's definition
- What does the system do?
- How does it work?
- Reporting capabilities
- Upcoming Related System Development Activities
- System Demonstration

Estimated Duration of the Presentation: 20 minutes

Task 7 - Milestone 7.1

Logistics Management MIS Integrated with service statistics MIS	MOHP records	Logistics management MIS integrated with services MIS and functioning	• Original due date: 1/1/00 • System design completed • Software developed • Data converted from old formats and integrated into new relational database model • Documented

A General System's Definition

A Comparative Approach & Tool for Data Analysis, Planning, and Decision Making

MOHP/SDP Logistics System - The Backbone Behind the Egyptian Success

- Wide spread access to family planning.
- Largest public sector quality improvement program in the world.
- Decline in unmet need (16% to 14.5%).
- CPR from 47% to 56.1% 1995 - 1999.
- TFR declined by 37.7% from 5.3 in 1975 to 3.3 in 1999.

Decline in TFR in Egypt - Last 25 Years

Warehouse Assessment - General Finding

- ... With an impressive record, contraceptives are flowing through the system from the moment they arrive in country until they reach the clients at the health units
- ... almost all warehouses visited met standards of safety, cleanness, temperature, and protection from physical agents
- ... Given the very low levels of expired or damaged stock found, the assessment team concluded that the norm of 3 months maximum and 2 months minimum stock works remarkably well as a containment mechanism for minimizing over and under supply situations
- ... LMIS within the MOHP has achieved a high degree of professionalism, maturity, and efficiency ...

What Can the System Do for US?

The system provides answers to numerous questions:

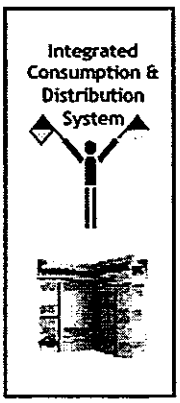
- Where are the commodities for the MOHP coming from (locally, internationally)?
- What are the main sources of commodities and their dimensions in terms of quantities and cost?
- What are the levels of distribution to the different parts of the country?
- How does distribution compares to reported consumption?
- What are the characteristics of the demand for contraceptives and how do they change through time? At the national level?, At the governorate level?, At the district level?

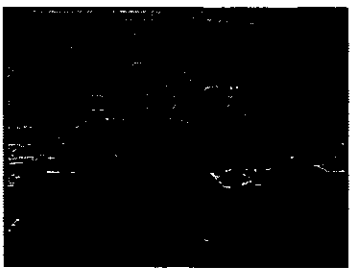
What Can the System Do for US? Continues ...

- How many CYPs were generated in a particular time period? At a particular level? From all methods? Or for a particular method?
- What are the stock levels on hand at any time? For each method? At a particular level? In amounts of commodities?, In number of months of stock?
- Which governorate? Or which district within a governorate is reporting the highest number of contraceptives distributed? Consummed? The lowest numbers?

How Does It Work?

Egyptian Pharmaceutical Trading Company



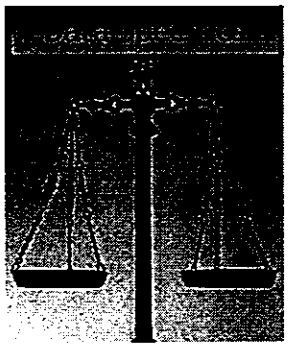


MOHP/SDP MIS Unit

How Does It Work? Continues ...

EPTC

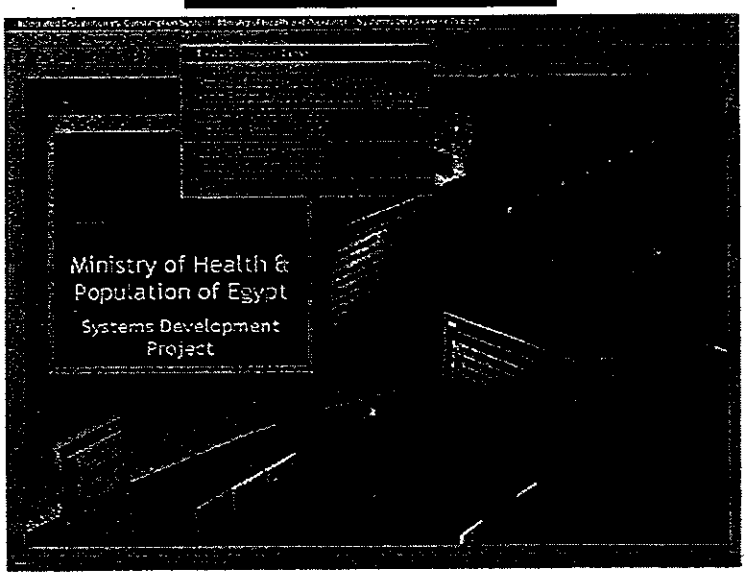
- Distribution Data From EPTC to the MOHP warehouses located at each governorate



SDP/MIS

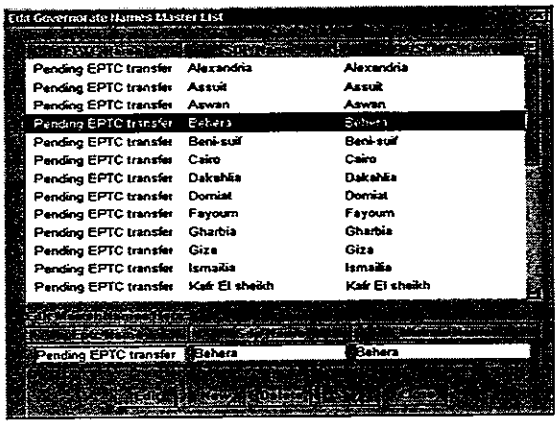
- Data on Incoming Shipments to EPTC's warehouses
- Governorate & District level consumption data
- Beginning of Year Stock levels for each governorate warehouse
- Distribution data from MOHP/Gov. Warehouses to district level warehouses

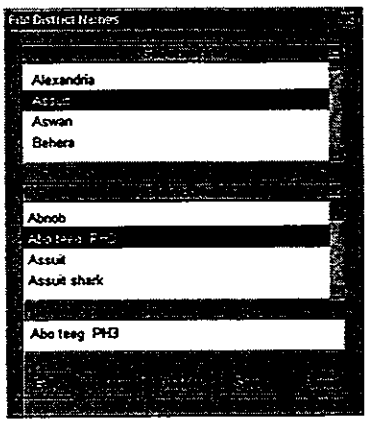
How Does It Work? Continues ...



How Does It Work? Continues ...

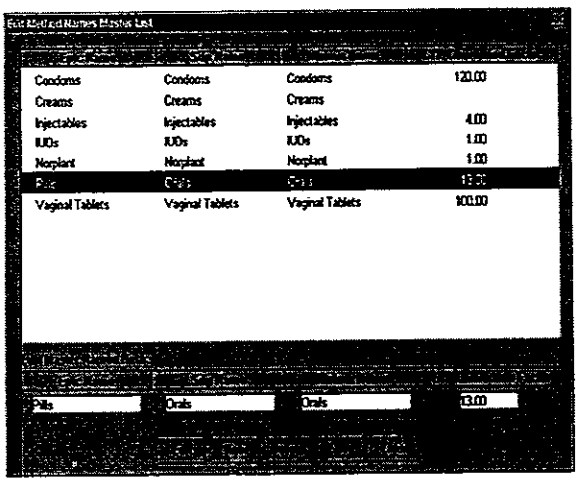
[redacted]

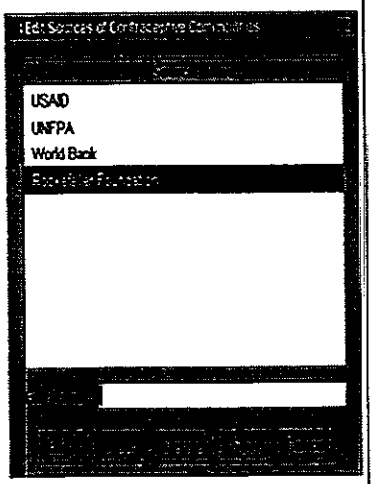




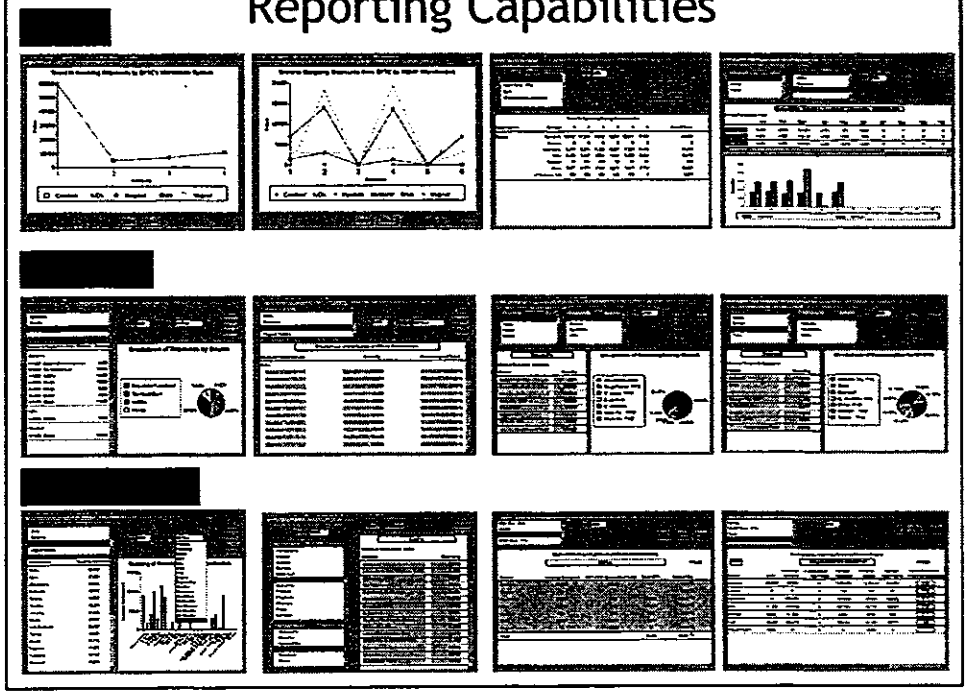
How Does It Work? Continues ...

[redacted]





Reporting Capabilities



Upcoming Related MIS Activities

- Setup a local area network at HQs
- Setup the integrated consumption & distribution system in a client/server architecture

Thank You!

APPENDIX IV. MEMORANDUM TO DR. YAHIA – DELIVERY OF THE INTEGRATED CONSUMPTION/DISTRIBUTION SYSTEM

Pathfinder
INTERNATIONAL
Population / Family Planning IV, Egypt
USAID-Funded Project

I am coordinating with Mr. Abdel Monem and Dr. Mohsen for installing the system at the MOHP/SDP once the recently delivered computers are in place at the computer center.

We at Pop IV will be working side by side with your staff through out the duration of Pop IV in implementing bi-annual linkages of set of data and generation of reports, as well in fixing any technical difficulties undetected during the testing stage.

Dr. Yahia, please do not hesitate to letting me know if you have any questions, and I look forward to continue working with you and your staff on this and other activities.

Sincerely,

Luigi Jaramillo
MIS & Logistics Advisor
Pathfinder International

CC (without attachments):

Dr. Mohsen Fathy – MOHP/SDP/ MIS Unit Director
Mr. Turhan Noury – USAID / Health & Population Development Officer
Dr. Ayman A. Abdel Mohsen – USAID / Senior Medical Advisor
Ms. Lucie Cantsilieris – USAID / Project Management Assistant
Mr. Jestyn Portugill – Pop IV / Chief of Party
Mr. Steve Croll – Pop IV / Deputy Chief of Party
Mr. Steve Reiman – Pop IV / Financial & Sustainability Advisor

28L El Safa St., off El-Gazaer St.,
New Maadi, Cairo, Egypt.
Phone : (+202) 516-6170 / 1 / 4
Fax : (+202) 516-6177

The Population / FP IV Team :
Pathfinder International (PI)
Family Health International (FHI)
Johns Hopkins University Center for Communication Programs (JHU/CCP)
Management Sciences for Health (MSH)
The Futures Group International (TFGI)

Pathfinder
INTERNATIONAL
Population / Family Planning IV, Egypt
USAID-Funded Project

MEMORANDUM

Date: 7/15/2001

To: Dr. Yahia El Hadidi – Director, Popualtion & Family Planning Sector

From: Luigi Jaramillo / Pop IV MIS Advisor

Subject: Integrated Consumption & Distribution MIS

Dear Dr. Yahia, I am pleased to submit to you with this memorandum all the relevant material and programs for the Integrated Consumption & Distribution System (ICDS). The development and testing of the system has been a joint effort in which significant contributions have been made along the way during the last two years by your staff, staff from the EPTC, Mr. Carl Hawkins from USAID/Washington, and Mr. Turhan Noury from USAID/Egypt, among others.

The main objective of the system is to provide decision makers at the MOHP/Population Sector with the capabilities of comparing consumption data coming from the SDP/MIS with distribution data collected from the EPTC MIS and to provide analysis that ensure that amounts distributed to a particular area are in-tuned with reported consumption.

During the development process, several presentations took place through which your staff provided valuable feedback and through which technical improvements were identified. Equally, during this time, your staff has participated in the process of linking both sets of data. The database / developers at the SDP/MIS Computer Center have received in several occasions, as a group and individually hands-on training in the process of converting non-relational data into a relational / normalized tables and linking them together under on database for comparison.

At this time, I am attaching the following material:

- A CD-ROM containing all system source code, one year of successfully linked database, and all files pertaining to the system's documentation
- The System's User's Guide
- The System's Programmers Guide

28L El Safa St., off El-Gazaer St.,
New Maadi, Cairo, Egypt.
Phone : (+202) 516-6170 / 1 / 4
Fax : (+202) 516-6177

The Population / FP IV Team :
Pathfinder International (PI)
Family Health International (FHI)
Johns Hopkins University Center for
Communication Programs (JHU/CCP)
Management Sciences for Health (MSH)
The Futures Group International (TFGI)

APPENDIX V. – ORIGINAL INTEGRATED CONSUMPTION/DISTRIBUTION SYSTEM DESIGN

MINISTRY OF HEALTH AND POPULATION OF EGYPT

CONTRACEPTIVE INVENTORY INFORMATION SYSTEM

Design for the Second Phase of the CIIS

By Luigi Jaramillo

April 22 to 25, 1999

70

TABLE OF CONTENTS

		Page
I.	Background	3
II.	MIS Objectives	5
III.	Indicators	5
IV.	Reports (Outputs)	
V.	User Interface	
VI.	Reporting SQL	
VII.	Proposed Timeline for Implementation	

71

I. BACKGROUND

This is the second stage of development of the Contraceptive Invertory Information System. During the first stage of development, the old CIIS was reviewed and a strategy for improving it was identified and implemented. Currently, the old version has been upgraded to a Windows 95 environment under Access 97 and utilizing a far more user friendly interface with more flexible reporting capabilities.

During that first stage, the main goal was to improve the mechanisms for monitoring the flow of commodities through the logistics system in the country, that is, too track amounts of commodities **distributed** from one warehouse level to other subsequent levels. In the following stage (stage II) we will build the mechanisms for expanding the CIIS to also track **consumption** data from the SDP's MIS

During this first stage, several important activities have been completed as follows:

- LAN equipment (seven work stations) has been identified, procured, delivered, and installed
- Personnel has been trained in LAN administration
- Design and programming of first stage module.

The work was divided into two main stages of development. The first stage thus concentrated on capturing of distribution data from EPTC's existing MIS at that time (Infostar). The first stage has been completed.

Although the original plan called in addition to the work mentioned above for automating the district level warehouses, we are at this time proposing that this activity be temporarily postponed based on the following important issues:

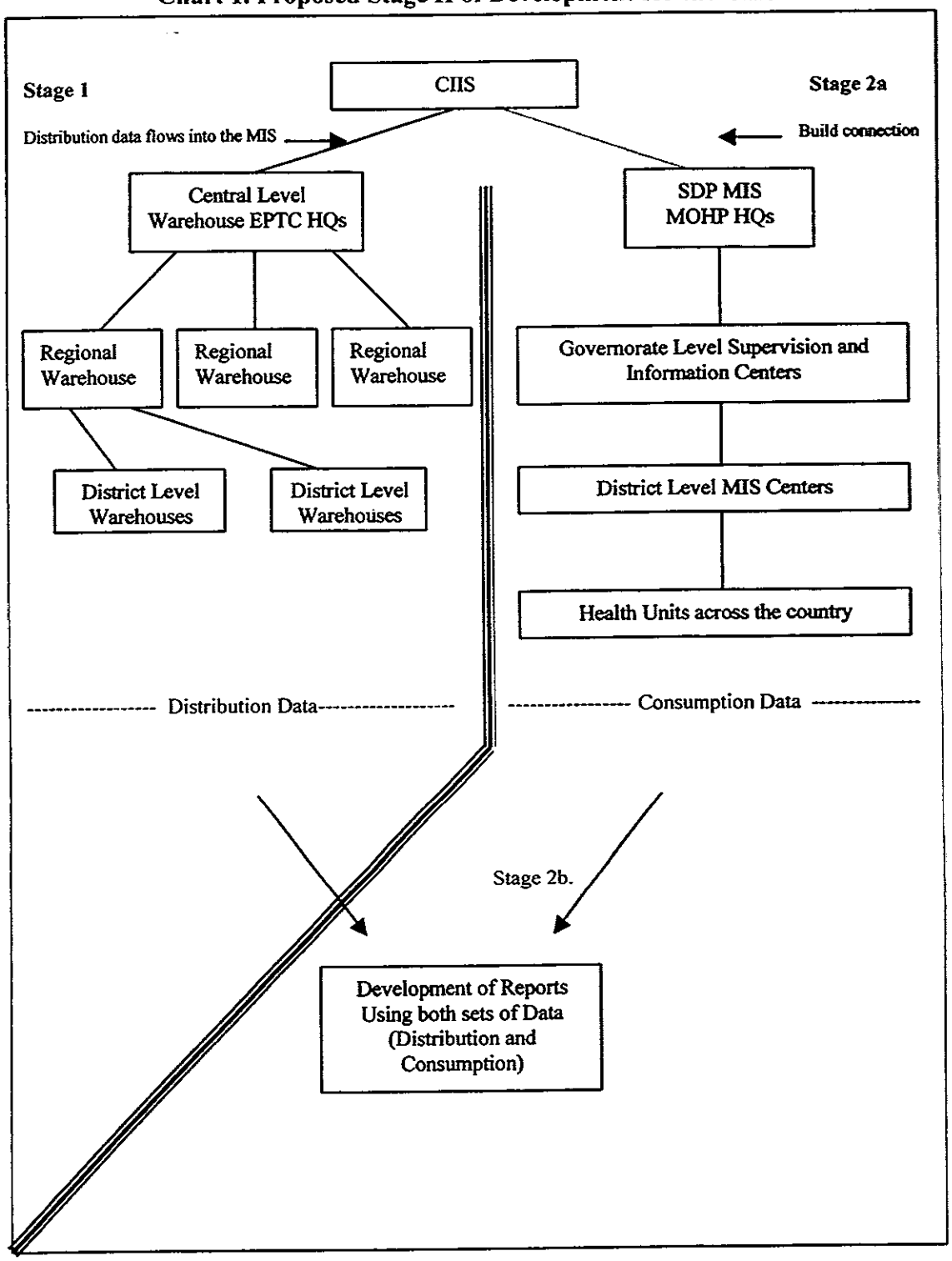
- Risk of duplicating efforts, as EPTC's additional and internal organizational MIS plans include the automation of all their warehouses across the country.
- New challenge has been presented to transfer the management and procurement of contraceptive commodities to the GOE under USAID's recently funded Pop IV project, this creates a need to define when and whether automation should take place within the MOHP instead.
- MOHP – Population sector is reviewing the need to automate district level offices which in turn may be properly equipped to manage the CIIS.
- The Ministry of Health National Integrated Information System under the Health Reform Project is implementing automation of district levels across the country
- The Healthy Mother/Healthy Child project has started the implementation of a plan to computerize information systems to all 64 districts of upper Egypt.

Therefore, instead of proceeding at this time with that automation, we propose for the second stage of development the in-corporation of the consumption data coming from the

72

SDP's MIS (or the National Population Council's nation wide MIS TA-8) and in the generation of the reporting requirements included in this document. The following chart helps describe better the proposed changes in development strategy:

Chart 1. Proposed Stage II of Development for the CIIS



73

II. MIS OBJECTIVES

The main objective of the CIIS is to provide project directors at the Ministry of Health and Population of Egypt and USAID population officers with the tools to monitor distribution of commodities while at the same time providing the ability to cross analyze distribution vis-à-vis reported consumption.

This document represents the software design for the second stage, that is, for the module to capture and process the consumption data.

During the second stage and included in this document, the team has reviewed the SDP's MIS data collection forms and the reporting requirements of the relevant parties. The analysis served as the basis for this design.

Capturing consumption data through the SDP/MIS represents and advantage since the SDP/MIS is a well established MIS in Egypt with over 10 years of implementation experience. Audits and evaluation activities have time and time again demonstrated the accuracy of their record keeping and the system is instrumental for CDC's logistics advisors for the preparation of the annual Contraceptive Procurement Tables (CPTs).

III. INDICATORS

The CIIS will monitor the following indicators:

- Incoming shipments of contraceptives from USAID donations and other donors (by method and brand)
- Incoming shipments of contraceptives from local organizations and other international markets (by method and brand)
- Shipments by lot number and expiration dates for each commodity
- Warehouse levels of commodities by method and brand
- Distribution patterns from central warehouse to subsequent levels
- Amounts on hand at each level, Head Quarters, Governorate and district (calculated also in months of consumption)
- Life of current stock
- Consumption by method, brand, health unit, district, governorate, and country as a whole
- Comparative analysis of distribution and consumption at district, governorate, and country as a whole
- Comparative analysis of incoming shipments and outgoing shipments at warehouses

DATA FLOW

The data for the second stage will be provided by the MOHP/SDP Management Information System (see Appendix I of this report) on a monthly basis via diskette. The CIIS will be equipped with an internal procedure which will use the SDP MIS database and will convert it into a file format accessible through Microsoft's jet engine.

Note: At the time of this design the inter-organizational agreements for the sharing of information have not yet been implemented.

IV. REPORTS

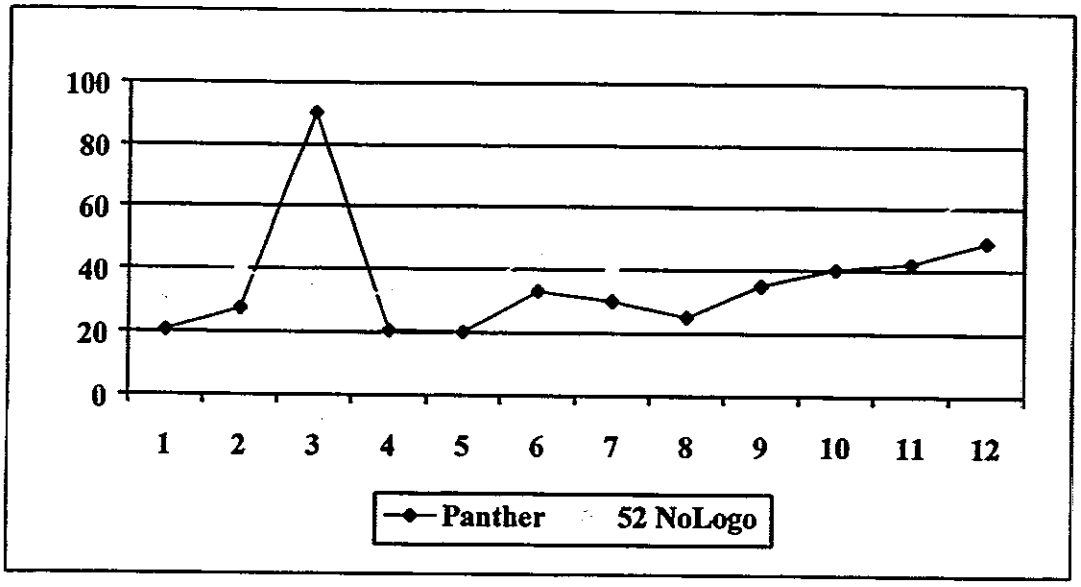
The following reports are included in this document for the review and consideration of CDC's system development team.

Report 1. Trend in Incoming Shipments to Warehouse

Method / Brand	1	2	3	4	5	6	7	8	9	10	11	12	Total
Condoms													
Panther													
52 No Logo													
Total:													
IUDs													
CT380													
.													
.													
Total:													
Vaginal Tablets													
Conceptrol													
.													
.													
Total:													

For the above report the user will select: a) The warehouse, b) One method, or all methods, c) the time period (from: __/__/____ to: __/__/____)

Graph 1. Trend in Incoming Shipments of Contraceptive to Warehouse



Since too many methods and brands are available, the graph will only be generated for a particular method and for either all brands combined or a specified brand.

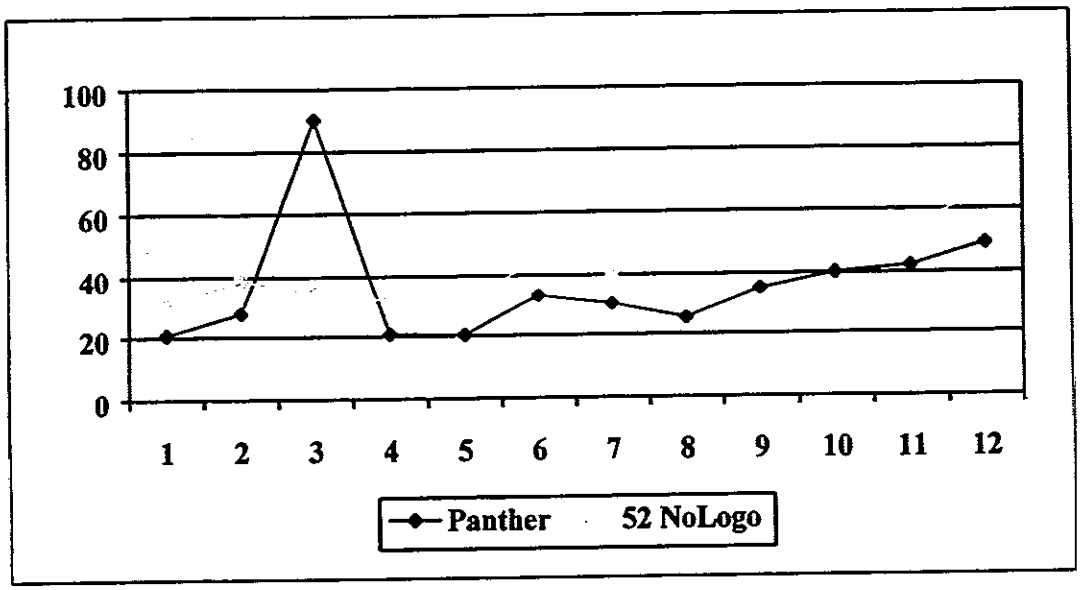
76

Report 2. Trend in Outgoing Shipments from the Warehouse

Method / Brand	1	2	3	4	5	6	7	8	9	10	11	12	Total
Condoms													
Panther													
52 No Logo													
Total:													
IUDs													
CT380													
.													
.													
Total:													
Vaginal Tablets													
Conceptrol													
.													
.													
Total:													

For the above report the user will select: a) The warehouse, b) One method, or all methods, c) the time period (from: __/__/____ to: __/__/____)

Graph 2. Trend in Outgoing Shipments of Contraceptive from Warehouse



Since too many methods and brands are available, the graph will only be generated for a particular method and for either all brands combined or a specified brand.

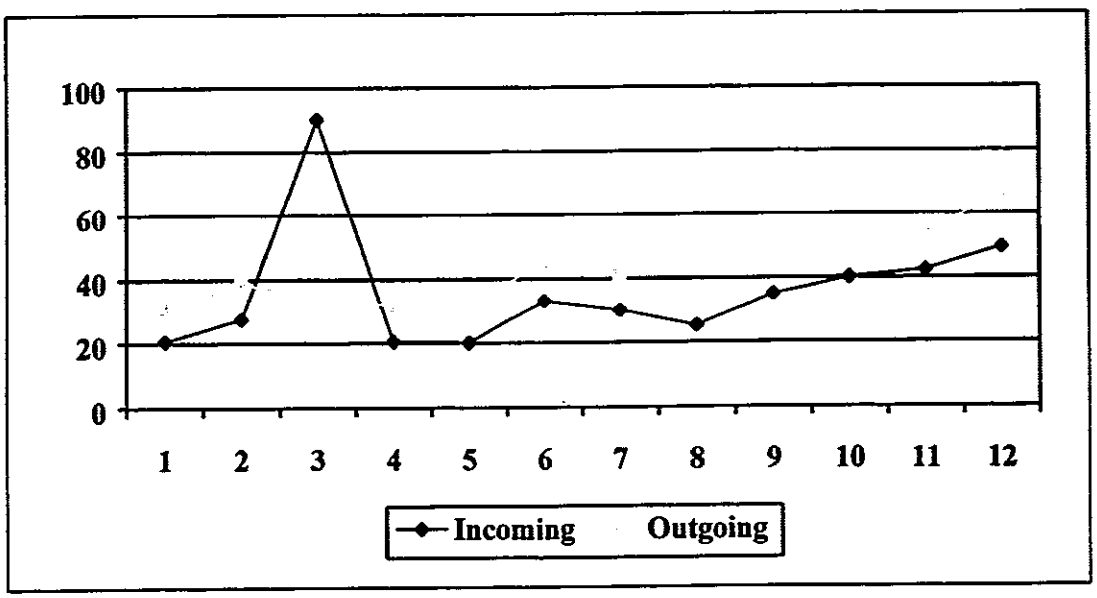
77

Report 3. Trend in Incoming vs. Outgoing Shipments from a Warehouse

Method / Brand	1	2	3	4	5	6	7	8	9	10	11	12	Total
Condoms Incoming Panther: Outgoing Panther: Difference: Incoming 52 No Logo: Outgoing 52 No Logo: Difference: Total Incoming: Total Outgoing: Difference:													
Pill Incoming Norminest: Outgoing Norminest: Difference:													

For the above report the user will select: a) The warehouse, b) One method, or all methods, c) the time period (from: __/__/____ to: __/__/____)

Graph 3. Trend in Incoming vs Outgoing Shipments from a Warehouse



For the above graph, the use will specified if graph is desired for all brands combined within a method, or for a specified brand.

78

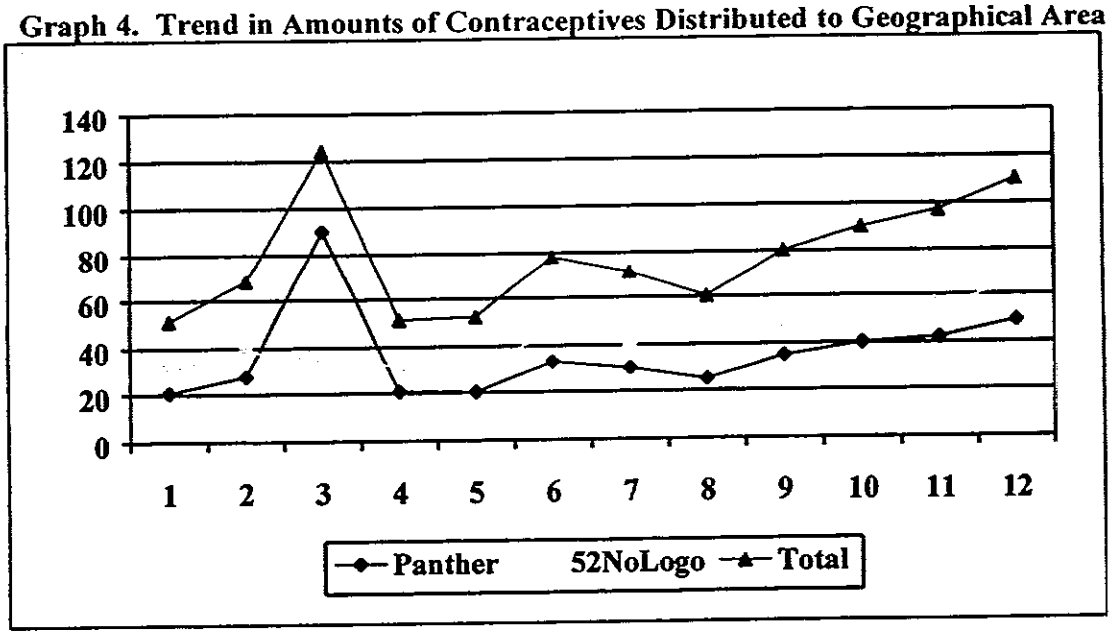
Report 4. Trend in Amounts of Contraceptives Distributed to Geographical Area

Governorate: Giza District: All Districts in Giza From: __/__/____ to: __/__/____

Method / Brand	1	2	3	4	5	6	7	8	9	10	11	12	Total
Condoms													
Panther													
52 No Logo													
Total:													
IUDs													
CT380													
.													
.													
Total:													
Vaginal Tablets													
Conceptrol													
.													
.													
Total:													

For the above report, the user will specify: a) The Governorate, b) the District or all districts combined, c) the time period for the report

Graph 4. Trend in Amounts of Contraceptives Distributed to Geographical Area



The user will specify for the graph the method to chart. All brands for that method will be charted unless the user specifies only one brand.

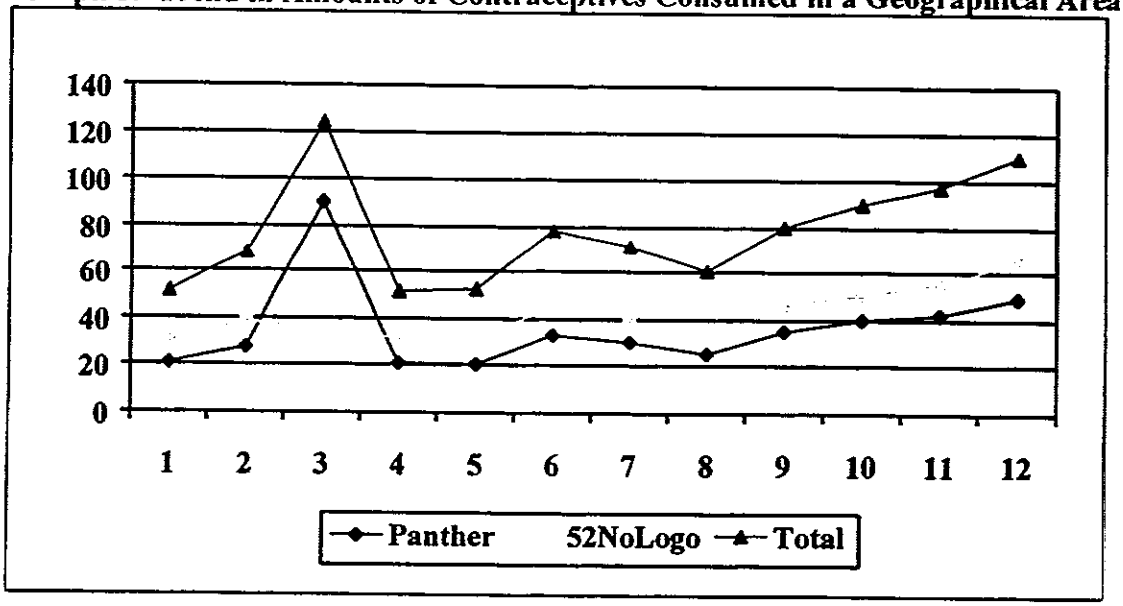
Report 5. Trend in Amounts of Contraceptives Consumed in a Geographical Area

Governorate: Giza District: All Districts in Giza From: __/__/____ to: __/__/____

Method / Brand	1	2	3	4	5	6	7	8	9	10	11	12	Total
Condoms													
Panther													
52 No Logo													
Total:													
IUDs													
CT380													
.													
.													
Total:													
Vaginal Tablets													
Conceptrol													
.													
.													
Total:													

For the above report, the user will specify: a) The Governorate, b) the District or all districts combined, c) the time period for the report

Graph 5. Trend in Amounts of Contraceptives Consumed in a Geographical Area



The user will specify for the graph the method to chart. All brands for that method will be charted unless the user specifies only one brand.

30

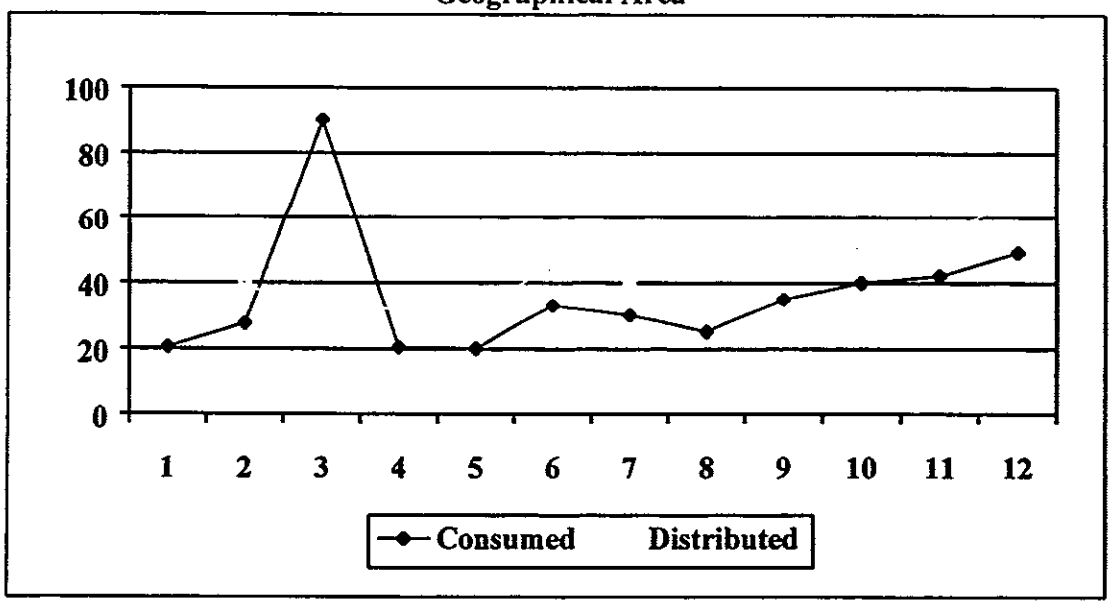
Report 6. Trend in Amounts of Contraceptives Distributed vs. Consumed in a Geographical Area

Governorate: Giza District: All Districts in Giza From: __/__/____ to: __/__/____

Method / Brand	1	2	3	4	5	6	7	8	9	10	11	12	Total
Condoms													
Distributed Panther:													
Consumed Panther:													
Difference:													
Distributed 52 NoLogo:													
Consumed 52 NoLogo:													
Difference:													
Total Distributed:													
Total Consumed:													
Total Difference:													
Pill:													
.													
.													
.													

For the above report, the user will specify: a) The Governorate, b) the District or all districts combined, c) the time period for the report

Graph 6. Trend in Amounts of Contraceptives Distributed vs. Consumed in a Geographical Area



The user will specify for the graph the method to chart. All brands for that method will be charted unless the user specifies only one brand.

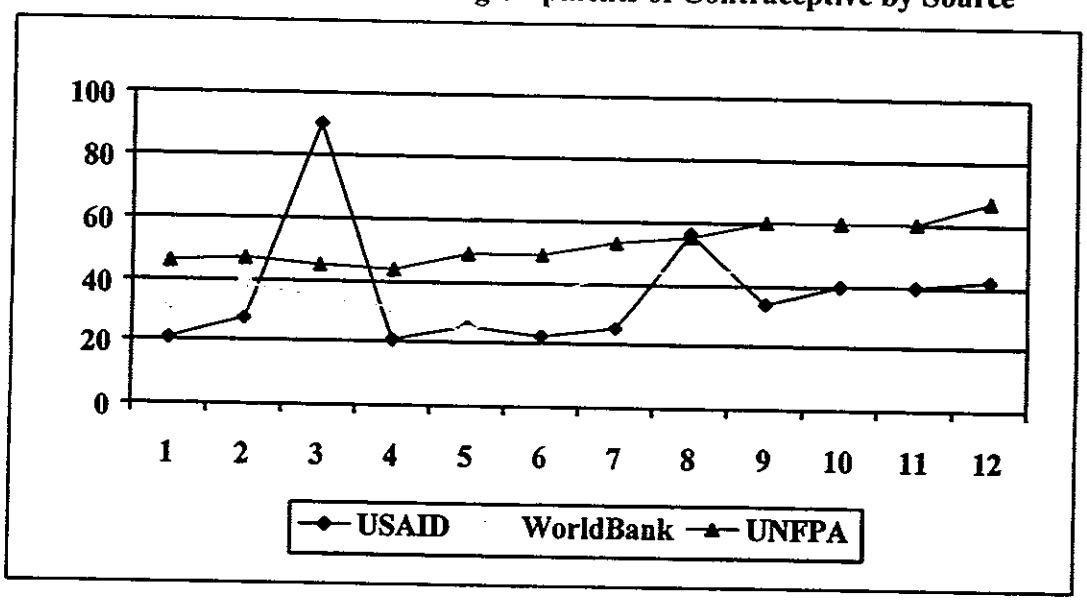
81

Report 7. Trend in Incoming Shipments by Source

Source: USAID **Method / Brand**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**Total**
Condoms													
Panther													
52 No Logo													
Total:													
IUDs													
CT380													
.													
.													
Total:													
Vaginal Tablets													
Conceptrol													
.													
.													
Total:													

For the above report the user will select: a) The source of commodities (or all Sources combined), b) One method, or all methods, c) the time period (from: __/__/____ to: __/__/____)

Graph 7. Trend in Incoming Shipments of Contraceptive by Source



Since too many methods and brands are available, the graph will only be generated for a particular method and for all brands combined for each one of the sources.

82

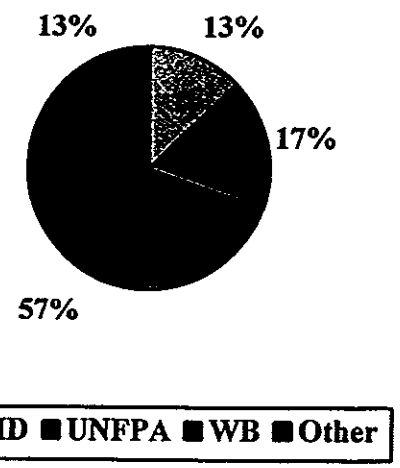
Report 8. Breakdown of Incoming shipments by Source

Report requested for the period starting: __/__/____ and ending: __/__/____

Method/Source	Amounts Received	% Contribution from Total
Condoms		
USAID	50,000	50%
World Bank	15,000	15%
UNFPA	5,000	5%
Local Production	10,000	10%
Procurement from China	10,000	10%
Total	100,000	100%
Pills		
USAID		
World Bank		
UNFPA		
Local Production		
Procurement from China		
Total		

For the above report the user will select: a) the time period for the report, b) one method, or all methods.

Graph 8. Breakdown of Incoming shipments by Source



Like in the table above, the pie graph will be drawn for the time period for one method at a time. The user will therefore specify which method to chart.

83

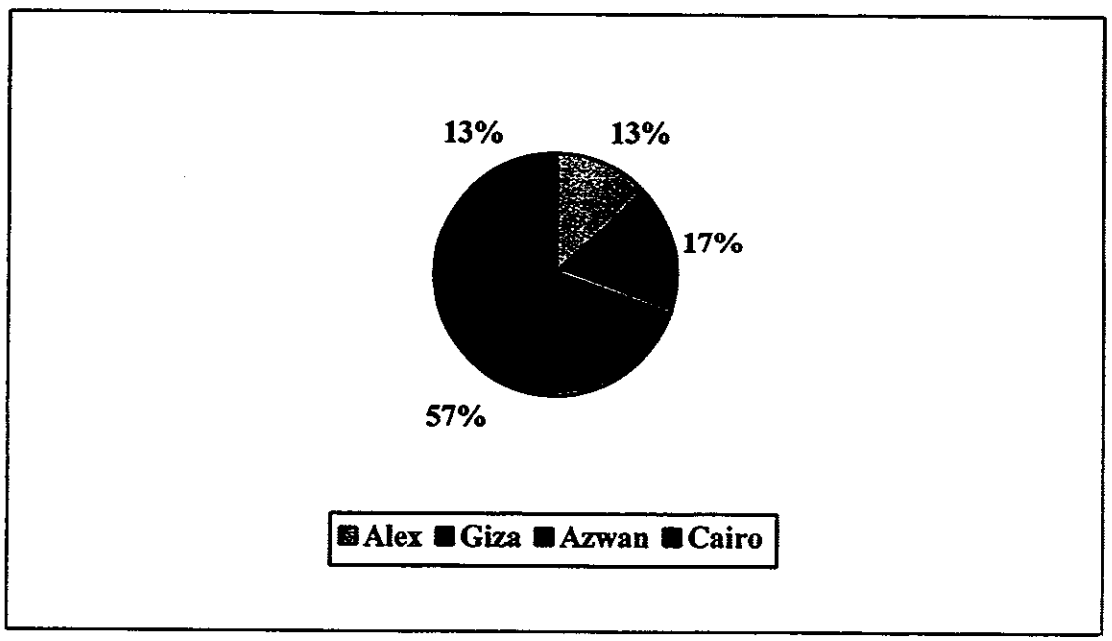
Report 9. Breakdown of Distribution Amounts by Geographic Region

Report requested for the period starting: __/__/____ and ending: __/__/____

Method/Source	Amounts Received	% Contribution to Total
Condoms		
Alexandria	50,000	50%
Giza	15,000	15%
Red Sea	5,000	5%
Aswan	10,000	10%
Cairo	10,000	10%
.		
.		
.		
.		
.		
.		
.		
Total	100,000	100%

For the above report the user will select: a) the time period for the report, b) one method, or all methods and c) whether the report is desired for all governorate, or all districts within one governorate.

Graph 9. Breakdown of Distribution Amounts for a Specified Method by Geographcial Region



Like in the table above, the pie graph will be drawn for the time period for one method at a time. The user will therefore specify which method to chart.

84

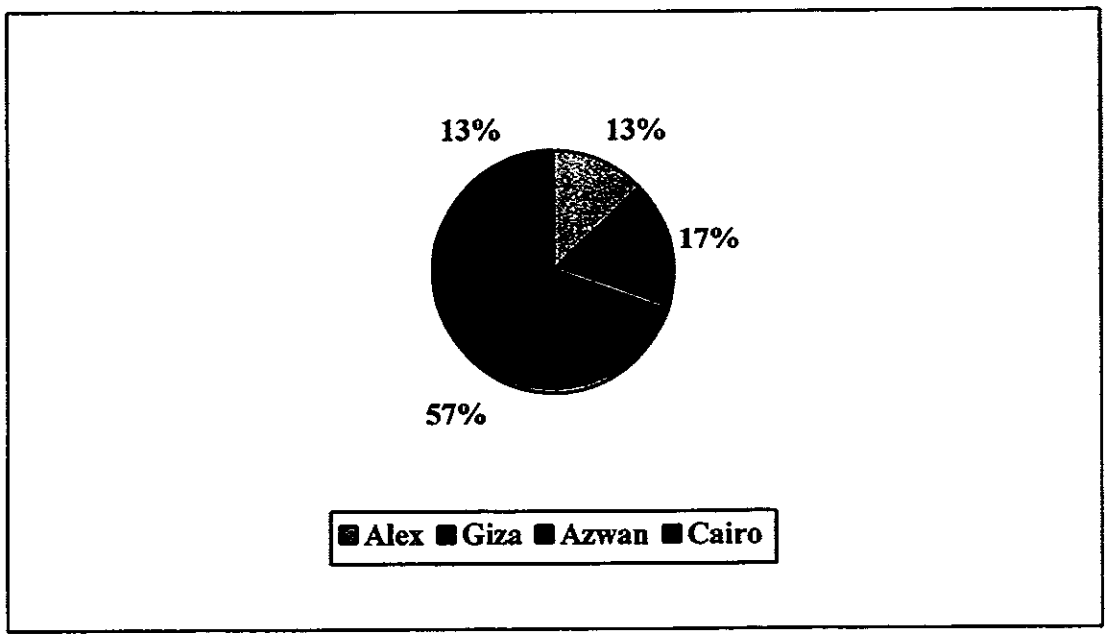
Report 10. Breakdown of Consumption of Commodities by Geographic Region

Report requested for the period starting: __/__/____ and ending: __/__/____

Method/Source	Consumption Amounts	% Contribution to Total
Condoms		
Alexandria	50,000	50%
Giza	15,000	15%
Red Sea	5,000	5%
Aswan	10,000	10%
Cairo	10,000	10%
.		
.		
.		
.		
.		
.		
.		
Total	100,000	100%

For the above report the user will select: a) the time period for the report, b) one method, or all methods and c) whether the report is desired for all governorate, or all districts within one governorate.

Graph 10. Breakdown of Consumption of Commodities for a Specified Method by Geographcial Region



Like in the table above, the pie graph will be drawn for the time period for one method at a time. The user will therefore specify which method to chart.

85

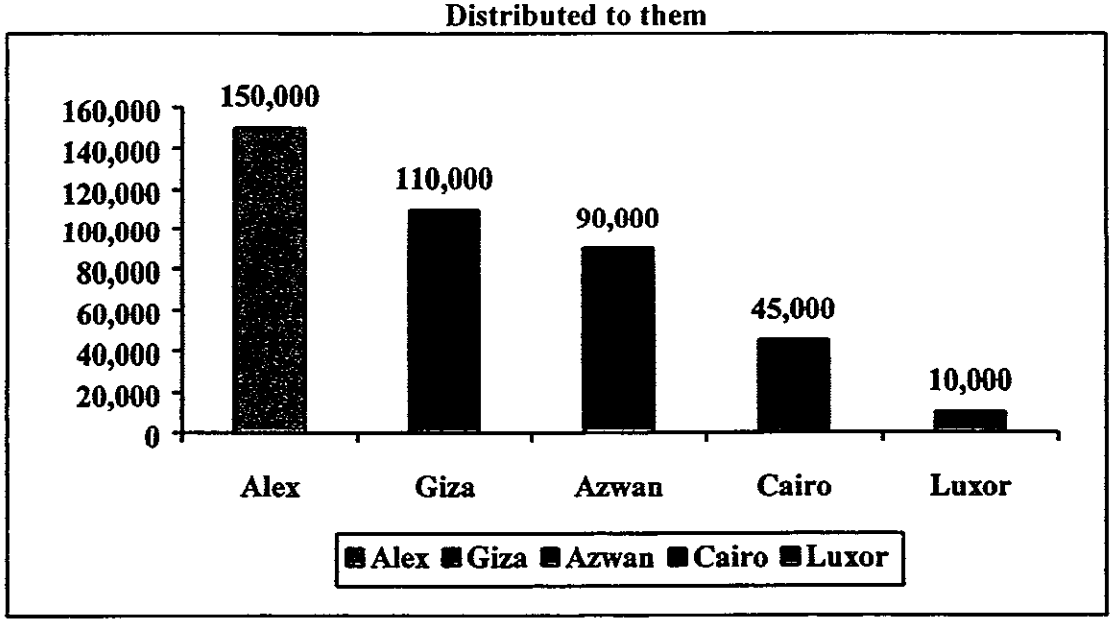
Report 11. Ranking of Geographical Regions by Amounts of Commodities Distributed

Report requested for the period starting: __/__/____ and ending: __/__/____ Method Selected: Orals

Governorate	Orals Distributed to Governorate
Alexandria	150,000
Giza	59,000
Red Sea	17,000
Aswan	10,000
Cairo	4,000
.	
.	
.	
.	
.	
.	
.	
Total	10,456,213

For the above report the user will select: a) the time period for the report, b) one method, and c) whether the report is desired for all governorate, or all districts within one governorate.

Graph 11. Ranking of Geographcial Regions by Amounts of Commodities Distributed to them



Like in the table above, the pie graph will be drawn for the time period for one method at a time.

86

Report 13. Inventory Report for Selected Geographical Region

Report requested for the period starting: __/__/____ and ending: __/__/____ Method Selected: All

Governorate: Giza

Beginning of Year Balance	+ Received thus far	+/- Adjustments	- Consumption	= Current Balance
Orals 100,000	50,000	- 10,000	80,000	60,000
IUDs 100,000	50,000	- 10,000	80,000	60,000
Condoms 100,000	50,000	- 10,000	80,000	60,000
Injectables 100,000	50,000	- 10,000	80,000	60,000

For the above report the user will enter: a) the current month of the year and the year. No graphs will complement this report.

Report 14. Method Mix by Geographical Region

Governorate: Giza

Method Mix based on consumption during the period starting:__/__/___ ending:__/__/__

Method	Reported Consumption During Period	CYPs Generated	Method Mix
Orals	130,000	10,000	61%
IUDs	1,000	5,000	30%
Injectables	4,000	1,000	6%
Condoms	20,000	200	1.2%
Tablets	20,000	200	1.2%
Total:	-------	16,400	100%

The user will specify: a) Whether the report is desired for the country, one governorate, or one district, and the time period for using that period's consumption for the calculations.

Report 15. Contraceptive Commodities Movement Detailed Report

Governorate: Giza Year: 1999, current or selected Month: November

Beginning of Year Balance	+ Received Amounts	= Positive Adjustments	- Negative Adjustments	Consumption	Avg. Monthly Consumption	Current Balance	Balance in No. of Months
Orals							
100,000	10,000	5,000	5,000	50,000	4,500	60,000	13 Months
IUDs							
100,000	10,000	5,000	5,000	50,000	4,500	60,000	13 Months
Condoms							
100,000	10,000	5,000	5,000	50,000	4,500	60,000	13 Months
Injectables							
100,000	10,000	5,000	5,000	50,000	4,500	60,000	13 Months
Norplant							
100,000	10,000	5,000	5,000	50,000	4,500	60,000	13 Months

For this report, the user will specify if the report is required for the whole country, one governorate, or one district, and the current month of the year and the year.

Report 16. – Governorates Receipts and Dispensed of USAID Donated Contraceptives in Calendar Year: ____

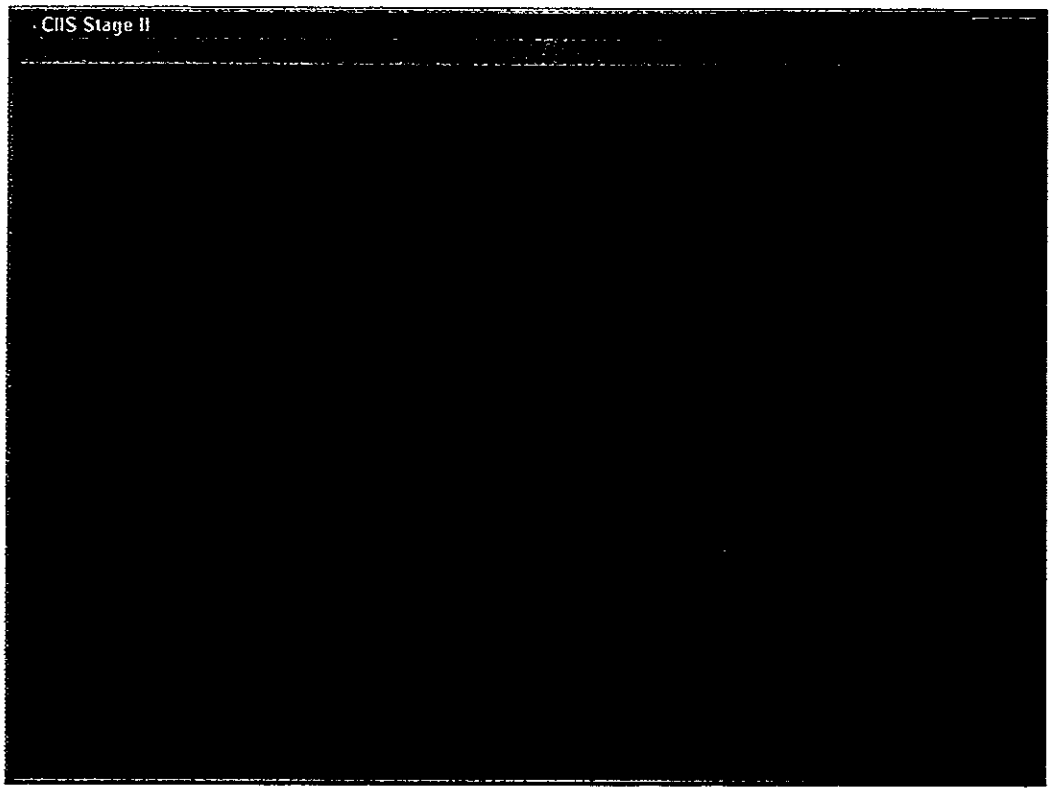
Governorate	IUD			Depo Provera			Condoms		
	Receipts	Dispensed	% of Total	Receipts	Dispensed	% of Total	Receipts	Dispensed	% of Total
Cairo									
Alexandira									
Port Said									
Suez									
Damietta									
Giza									
Ismailia									
Dakalia									
Sharkia									
Menoufia									
Gharbia									
Fayoum									
,									
,									
,									
,									
,									
,									
,									
,									
,									
,									
,									
Total									

89

V. USER INTERFACE DESIGN

The CIIS for the Stage II of development will have the following proposed Windows interface designed using Windows 95 development standards:

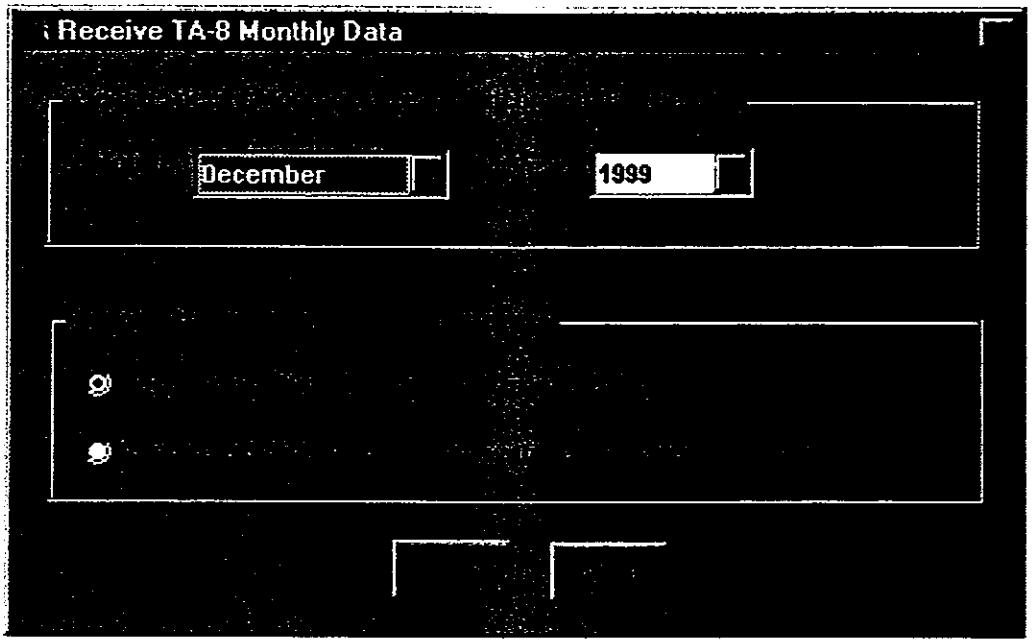
MDI Main Window



The complete menu system will be as follows:

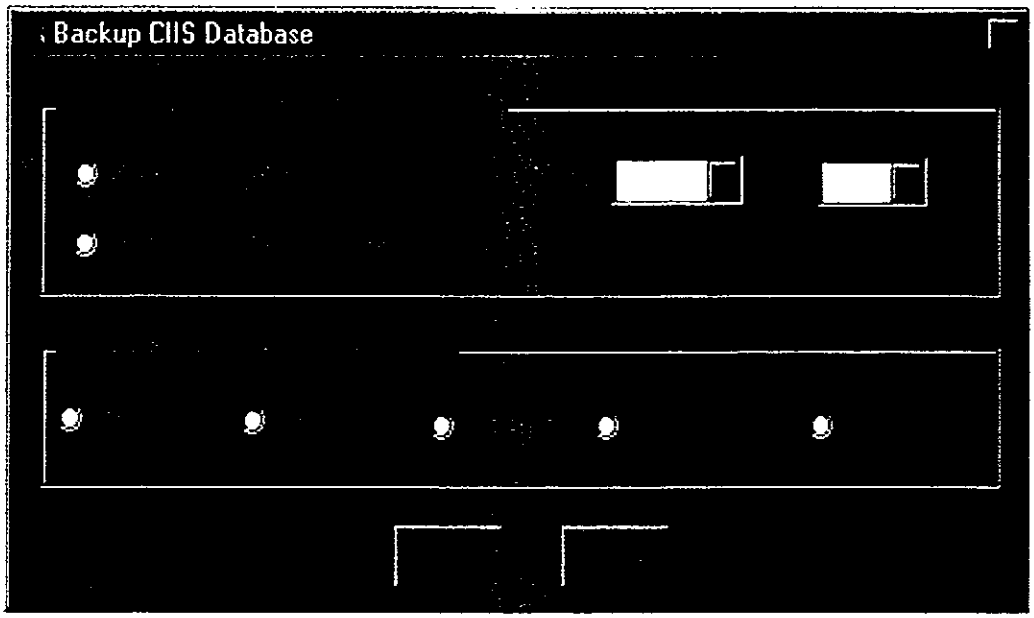
File	Edit	Reports
System Maintenance Receive TA-8 Backup Databases **Print** **Exit**	For Future Use	Report 1 Report 2 Report 3 Report 4 Report 5 Report 6 . . . . . Report 15 Report 1 6

File / System Maintenance / Receive TA-8



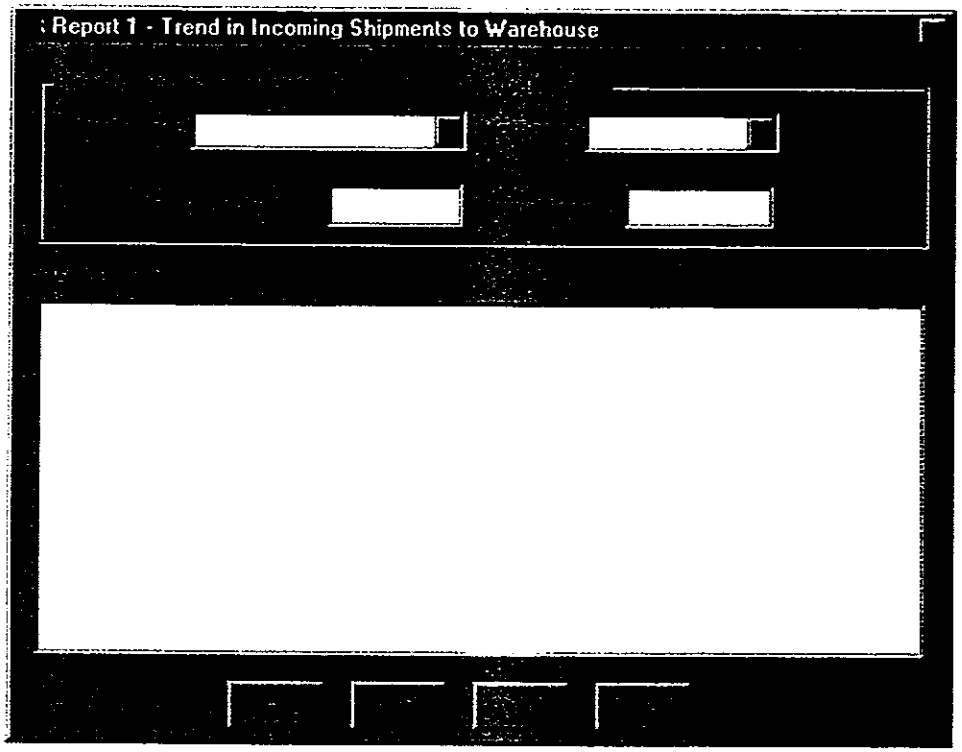
The user will use the above data interface to specify the month and the year of the data received from the TA-8. In addition, the user will specify whether the data is recently received or is a more recent version that should overwrite existing data.

Backup Database



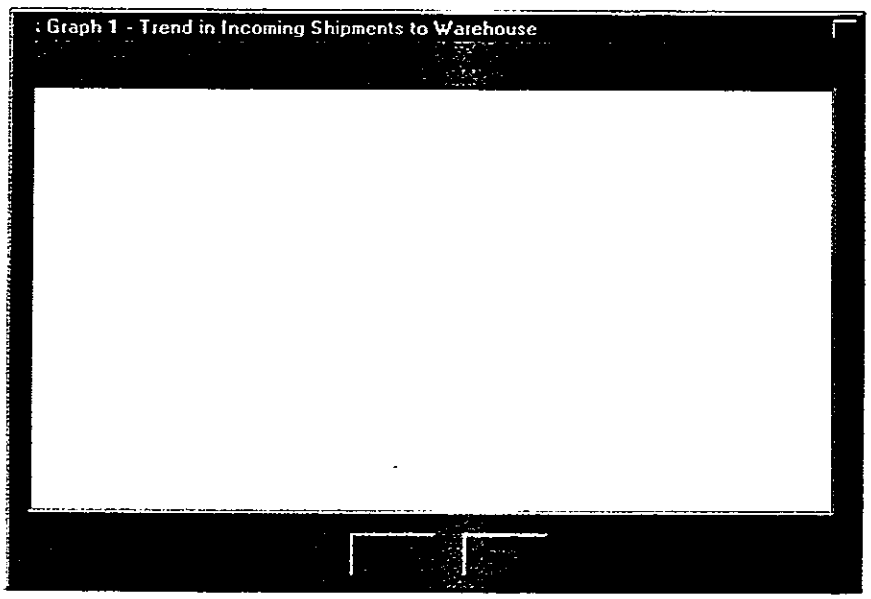
The above screen allows the user to backup the entire database or just a separate file for the specified month and year. The user then just specifies the destination for the backup.

User Interface for Reports 1, 2, 3

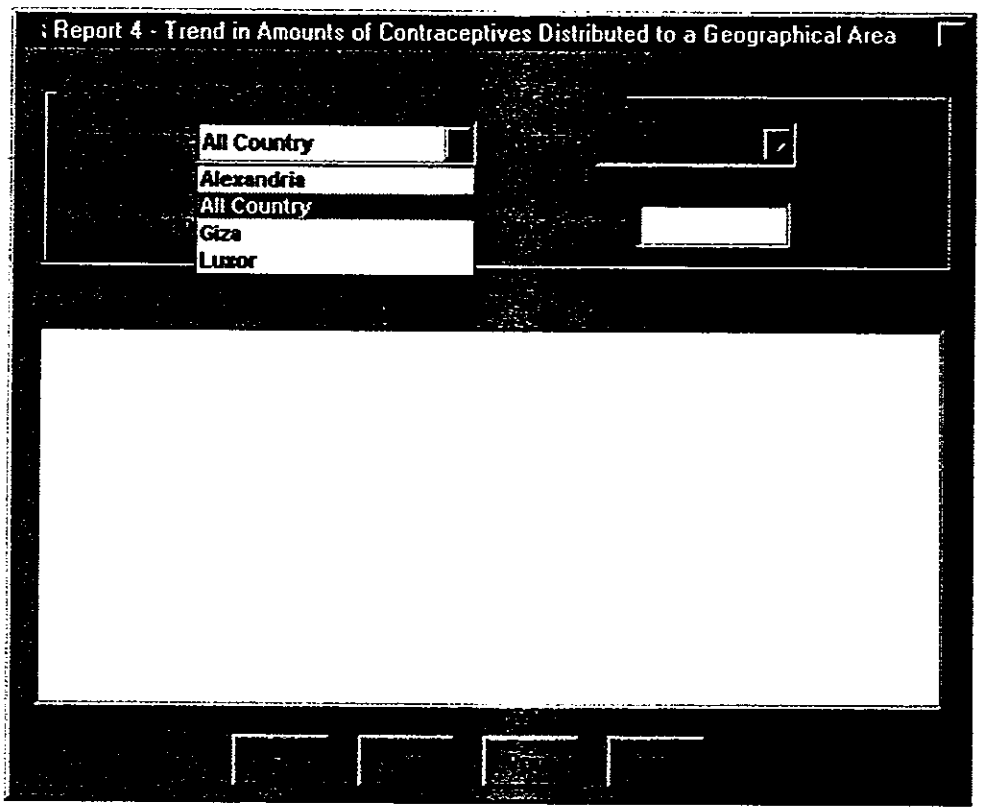


The user will specify for the report the Warehouse for the analysis, the method or all methods for the report, and the time period of the data to be included.

By pressing the [Go] button, the user accepts the parameters and the report will be displayed in the lower pane of the window. The [Print] button will send the same report to the printer, the [Cancel] button will close the window and return the user to the CIIS main window. The [Graph] button will open a window as follows:

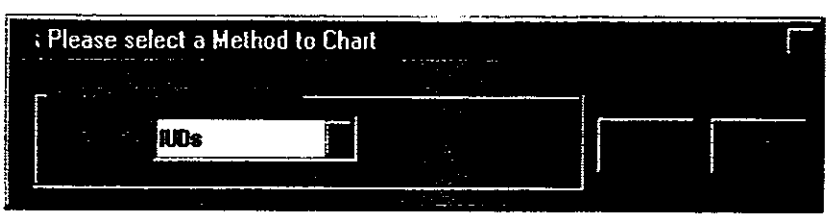


User Interface for Reports 4, 5, and 6



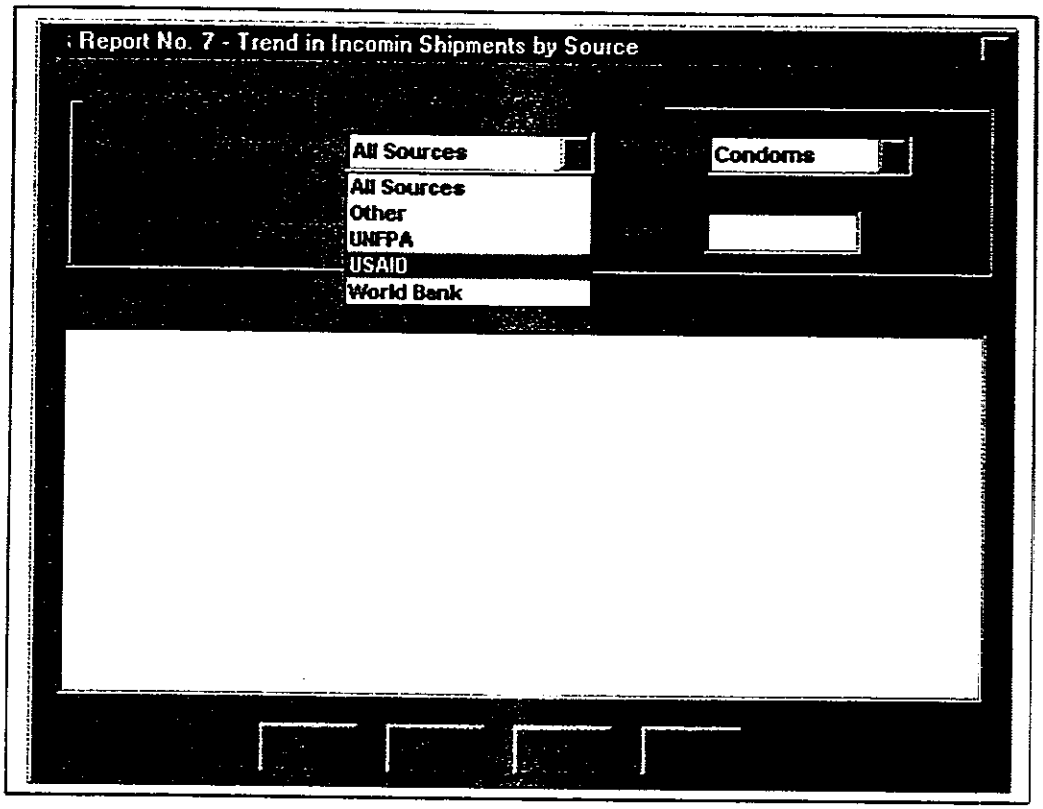
For Reports 4,5 and 6 the user will specify the Governorate (which has the option of selecting the entire country). If a governorate is selected, the next combo box will be enabled (disabled in picture above) and the user will then be able to specify a district (with an option for all districts). In addition, the user will specify the period for the report.

- Upon pressing the [Go] button, the report will be displayed in the lower pane of the window
- The [Print] button will send the report to the printer
- The [Cancel] button will close the window and return the user to the CIIS's main window
- The [Graph] button will open the following dialog box prior to displaying the graph:



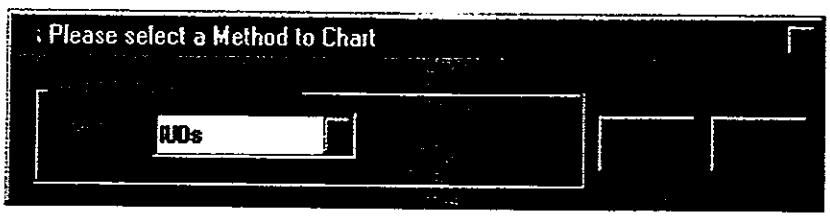
Once the user selects the method, the graph will be displayed in a separate windows and the through the user interface in Reports 1,2 and 3.

User Interface for Report 7. Trend in Incoming Shipments by Source



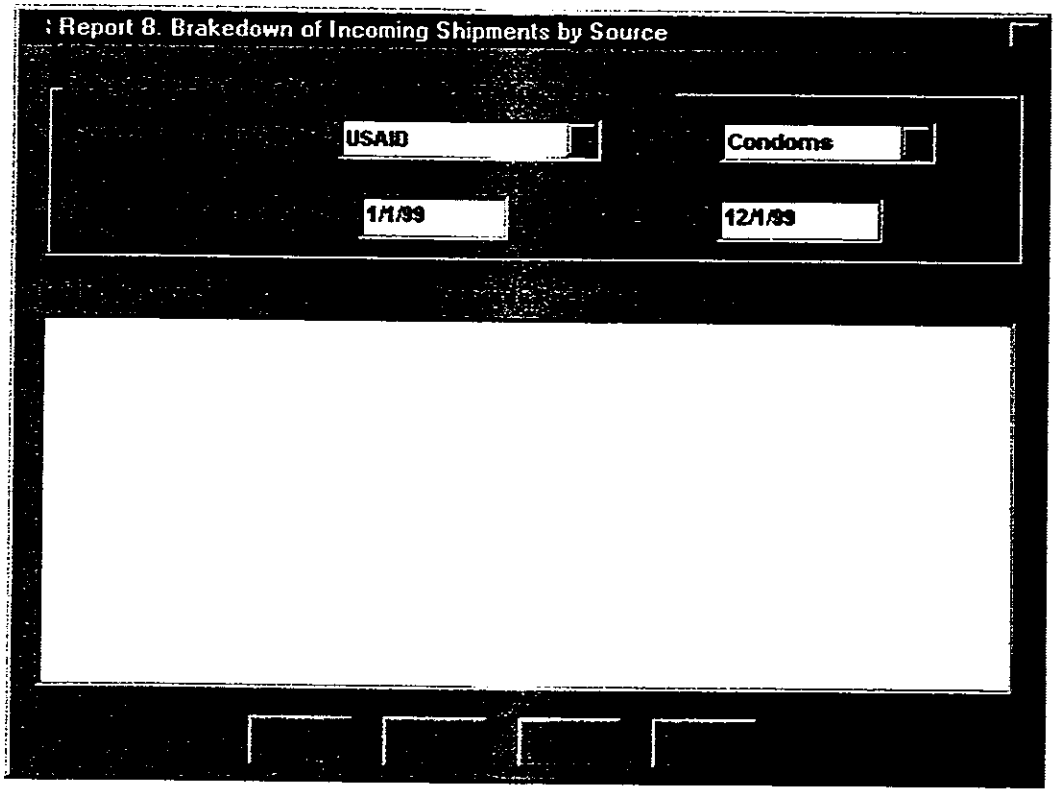
For Report 7 the user will specify the Source of Commodities (which has the option of selecting All Sources combined In addition, the user will specify the period for the report and the Method (or All methods)..

- Upon pressing the [Go] button, the report will be displayed in the lower pane of the window
- The [Print] button will send the report to the printer
- The [Cancel] button will close the window and return the user to the CIIS's main window
- The [Graph] button will open the following dialog box prior to displaying the graph:

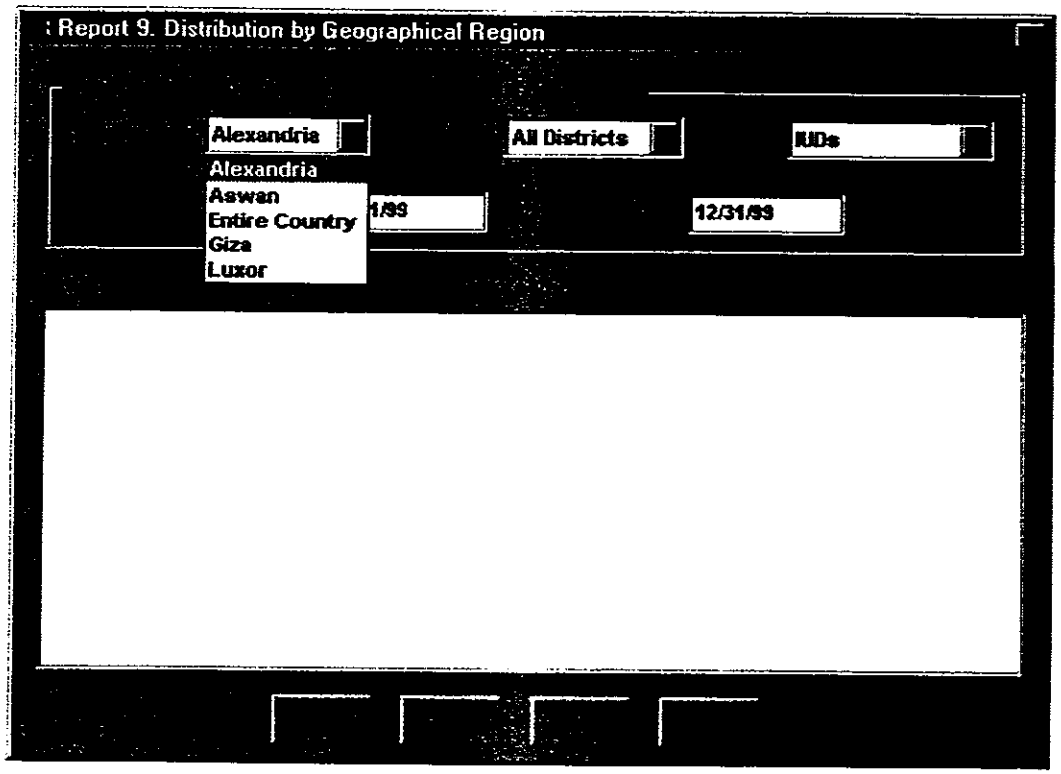


Once the user selects the method, the graph will be displayed in a separate windows and the through the user interface in Reports 1,2 and 3.

User Interface for Report 8. Breakdown of Incoming Shipments by Source

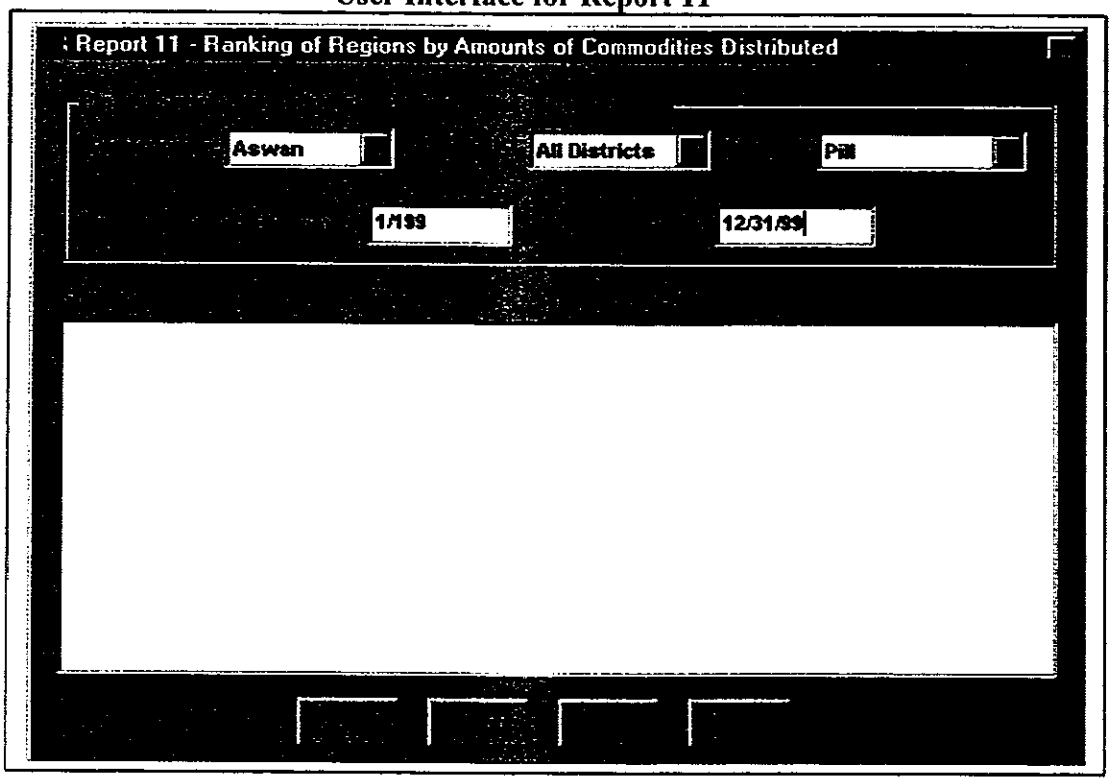


User Interface for Report 9, 10 (9-Distribution of Commodities by Region)

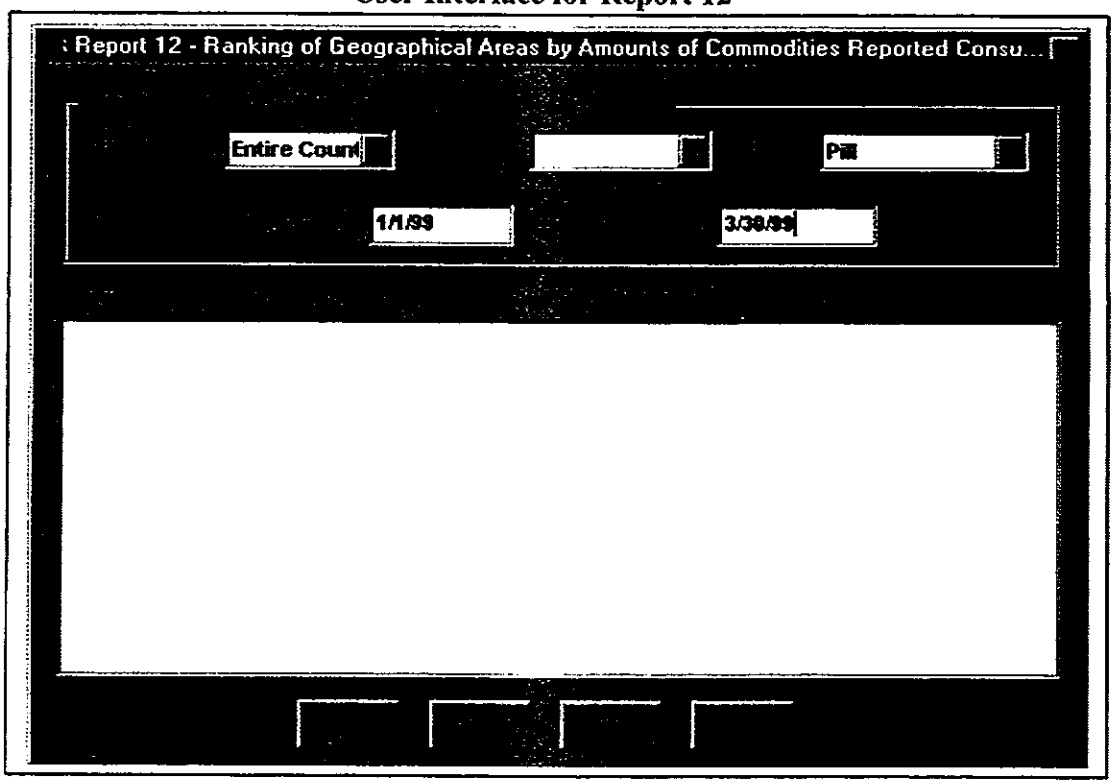


95

User Interface for Report 11

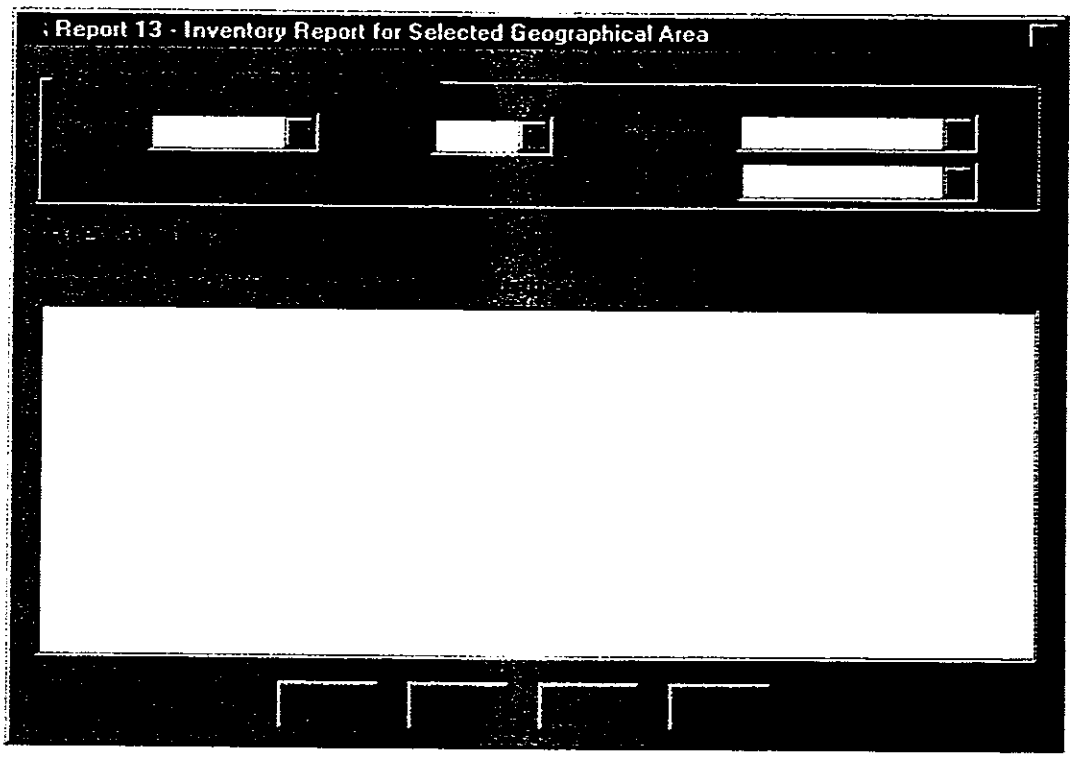


User Interface for Report 12

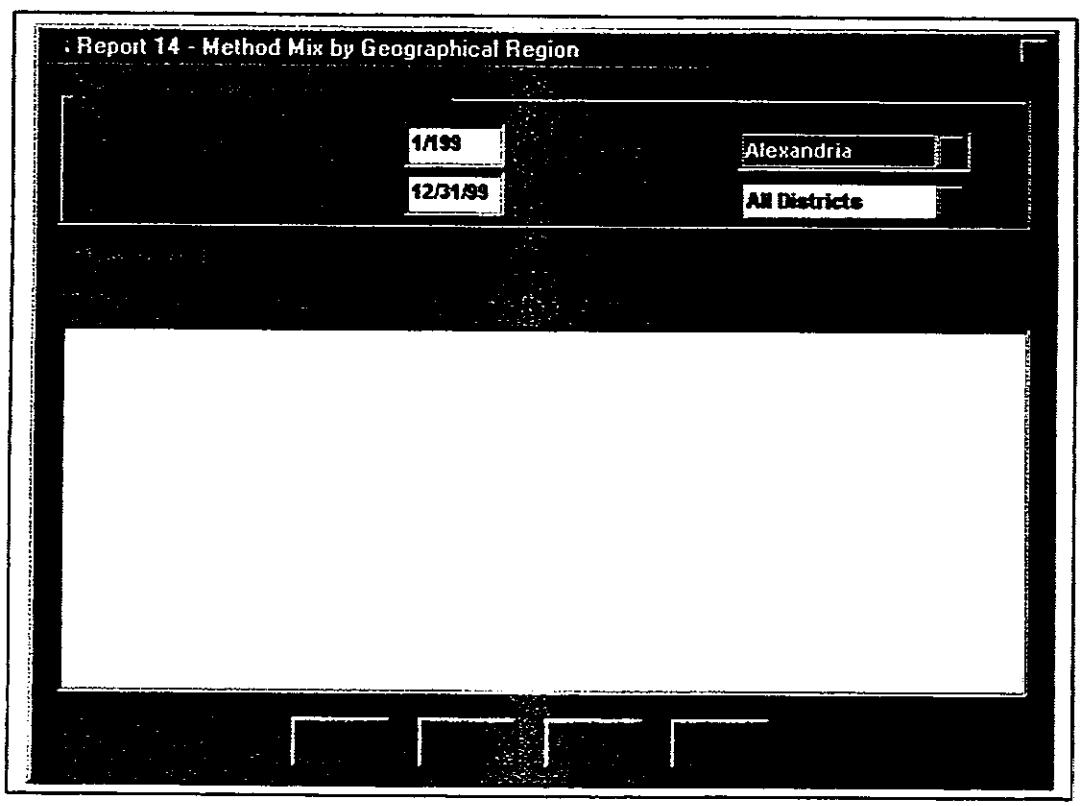


96

User Interface for Report 13 – Inventory Report for Select Geographical Region

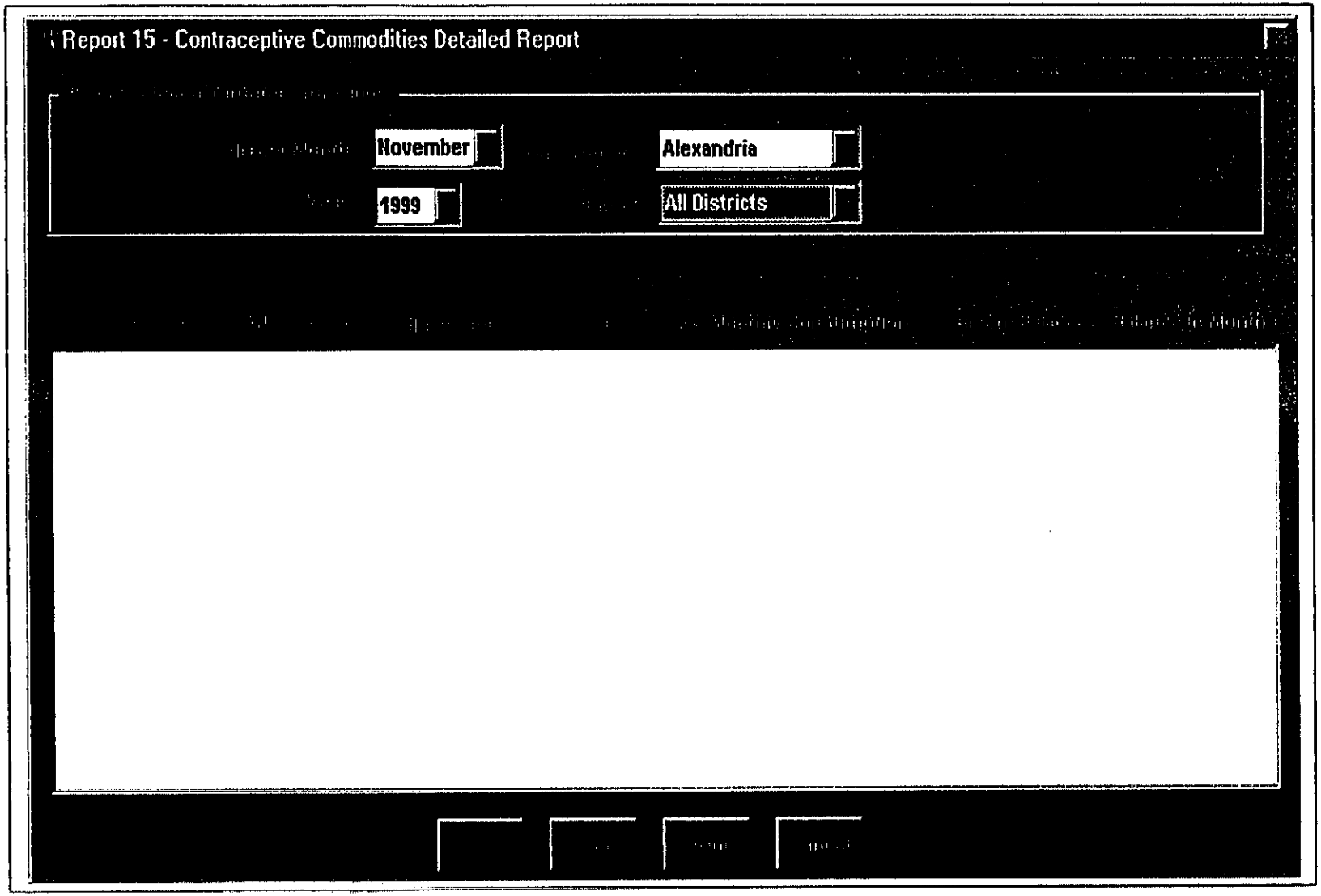


User Interface for Report 14 –Method Mix by Geographical Region



97

User Interface for Report 15 – Contraceptive Commodities Detailed Report



VI. PROPOSED TIMELINE FOR IMPLEMENTATION

Activity	10/99	11/99	12/99	1/00	2/00	3/00	4/00	5/00	6/00	7/00	8/00	9/00	10/00
SYSETM DESIGN													
Obtain Database Structures from SDP MIS	** (2 weeks October / Turhan, Luigi, Sheriff)												
Finalize System Design (This document)	** (1.5 weeks October / Nahed, Luigi, Sheriff)												
Present Plan of Action to MOHP and EPTC	* (0.5 week October / Turhan, Ralph, Nahed, Carl)												
PROGRAMING STAGE II													
Build Relational Database Model		** (2 weeks November / Nahed, Sheriff, Luigi)											
Program Data Transfer Procedure			** (2 weeks December / SDP's MIS staff)										
Program Reports for Screens				******** (8 weeks January and February / SDP's MIS staff)									
Program Reports for Printer							**** (4 weeks April / SDP's MIS staff)						
TESTING OF CIIS STAGE II													
Test the CIIS – Dummy Data								** (2 weeks May / EPTC, MOHP staffs)					
Field Test / One quarter of data transfers									******** (J,Mar,Apr/ EPTC)				
OTHER													
Document CIIS with new Module included									(4 weeks June / Nahed) ****				
Transfer CIIS management and equipment to MOHP									(To be determined)				

99

APPENDIX VI. RELEVANT MEMORANDUMS AND EMAILS

MEMORANDUM

Date: 9/7/00

To: Dr. Yahia Hadidi – Director , Population & Family Planning Sector, MOHP

From: Jestyn Protugill / Chief of Party – Population Family Planning IV project

Subject: Integrated Consumption and Distribution MIS Presentation

---

Dear Dr. Yahia, just a short note to kindly invite you to a presentation of the Integrated Consumption & Distribution MIS that Mr. Luigi Jaramillo and your staff have recently completed developing. The meeting will take place at Pathfinder's office at 11:00 am on the 1st of October, 2000.

The main objective of the presentation is to demonstrate the system and its usefulness as a tool for further enhancing contraceptive logistics management activities for the MOHP. The system responds to milestone 7.1 of our project and it is currently a beta version containing data on distribution and consumption for the first six months of the current year.

This is the first system developed at the SDP/MIS unit for a Windows NT environment and its reporting capabilities and functionality could serve as an example of what the remaining MIS modules will look like after they have been upgraded from their current DOS version into Windows 2000.

We will be very honored to have you and your MIS Unit staff at this meeting. We are equally expecting the presence of colleagues from USAID and EPTC.

Sincerely,

Jestyn Portugill
Chief of Party / Population / Family Planning IV

CC: Dr. Mohsen Fathy – MOHP/SDP/ MIS Unit Director
Ms. Brenda Doe -
Dr. Ayman A. Abdel Mohsen – USAID / Medical Advisor
Mr. Turhan Noury – USAID / Population Project Management Officer
Ms. Christine Ezzat – USAID / Project Management Assistant
Ms. Lucie Cantsilieris – USAID / Project Management Assistant
Mr. Luigi Jaramillo – Pop 4 / MIS Advisor
Mr. Steve Croll – Pop 4 / Deputy Chief of Party

MEMORANDUM

Date: 7/1/00

To: Dr. Yahia Hadidi – MOHP/SDP Executive Director

From: Luigi Jaramillo / Pop 4 MIS Advisor

Subject: Integrated Consumption and Distribution MIS

Dear Dr. Yahia, attached please find for your review a copy of the integrated consumption and distribution MIS that I have recently completed programming.

The system's data will come from two existing databases, thus avoiding any replication of data collection activities. Distribution data will be provided by EPTC on a monthly basis via diskette, and consumption data is already available at the SDP / MIS.

The system was programmed for a Windows environment using Powerbuilder/Sybase, which is the same platform in which the staff at the SDP/MIS unit was recently trained.

I will contact you soon to schedule a meeting to present the system to you and your staff and to review the necessary activities for its implementation. Once in operation, the system will respond to Milestone 7.1 of the Population / Family Planning IV project. All data included in the User's Guide is meant only for illustration.

I hope the integrated consumption and distribution MIS will pave the way to begin converting the current DOS systems and modules into Windows versions expanding the reporting capabilities to high new levels. I look forward to continue working closely with you and your staff on this and other MIS activities.

Sincerely,

Luigi Jaramillo

Luigi Jaramillo
MIS & Logistics Advisor
Rathfinder International

CC: Dr. Mohsen Fathy – MOHP/SDP/ MIS Unit Director
Mr. Chris McDermott – USAID / Chief Population and Health Division
Dr. Ayman A. Abdel Mohsen – USAID / Medical Advisor
Mr. Turhan Noury – USAID / Population Project Management Officer
Ms. Christine Ezzat – USAID / Project Management Assistant
Ms. Lucie Cantsilieris – USAID / Project Management Assistant
Mr. Jestyn Portugill – Pop 4 / Chief of Party
Mr. Steve Croll – Pop 4 / Deputy Chief of Party
Mr. Mark Schultz – Pop 4 / Financial and Sustainability Advisor

Pathfinder
INTERNATIONAL
Population / Family Planning IV, Egypt
USAID-Funded Project

MEMORANDUM

Date: 7/15/2001

To: Dr. Yahia El Hadidi – Director, Popualtion & Family Planning Sector

From: Luigi Jaramillo / Pop IV MIS Advisor

Subject: Integrated Consumption & Distribution MIS

Dear Dr. Yahia, I am pleased to submit to you with this memorandum all the relevant material and programs for the Integrated Consumption & Distribution System (ICDS). The development and testing of the system has been a joint effort in which significant contributions have been made along the way during the last two years by your staff, staff from the EPTC, Mr. Carl Hawkins from USAID/Washington, and Mr. Turhan Noury from USAID/Egypt, among others.

The main objective of the system is to provide decision makers at the MOHP/Population Sector with the capabilities of comparing consumption data coming from the SDP/MIS with distribution data collected from the EPTC MIS and to provide analysis that ensure that amounts distributed to a particular area are in-tuned with reported consumption.

During the development process, several presentations took place through which your staff provided valuable feedback and through which technical improvements were identified. Equally, during this time, your staff has participated in the process of linking both sets of data. The database / developers at the SDP/MIS Computer Center have received in several occasions, as a group and individually hands-on training in the process of converting non-relational data into a relational / normalized tables and linking them together under on database for comparison.

At this time, I am attaching the following material:

- A CD-ROM containing all system source code, one year of successfully linked database, and all files pertaining to the system's documentation
- The System's User's Guide
- The System's Programmers Guide

28L El Safa St., off El-Gazaer St.,
New Maadi, Cairo, Egypt.
Phone : (+202) 516-6170 / 1 / 4
Fax : (+202) 516-6177

The Population / FP IV Team :
Pathfinder International (PI)
Family Health International (FHI)
Johns Hopkins University Center for
Communication Programs (JHU/CCP)
Management Sciences for Health (MSH)
The Futures Group International (TFGI)

Pathfinder
INTERNATIONAL
Population / Family Planning IV, Egypt
USAID-Funded Project

I am coordinating with Mr. Abdel Monem and Dr. Mohsen for installing the system at the MOHP/SDP once the recently delivered computers are in place at the computer center.

We at Pop IV will be working side by side with your staff through out the duration of Pop IV in implementing bi-annual linkages of set of data and generation of reports, as well in fixing any technical difficulties undetected during the testing stage.

Dr. Yahia, please do not hesitate to letting me know if you have any questions, and I look forward to continue working with you and your staff on this and other activities.

Sincerely,

Luigi Jaramillo
MIS & Logistics Advisor
Pathfinder International

CC (without attachments):

Dr. Mohsen Fathy – MOHP/SDP/ MIS Unit Director
Mr. Turhan Noury – USAID / Health & Population Development Officer
Dr. Ayman A. Abdel Mohsen – USAID / Senior Medical Advisor
Ms. Lucie Cantsilieris – USAID / Project Management Assistant
Mr. Jestyn Portugill – Pop IV / Chief of Party
Mr. Steve Croll – Pop IV / Deputy Chief of Party
Mr. Steve Reiman – Pop IV / Financial & Sustainability Advisor

28L El Safa St., off El-Gazaer St.,
New Maadi, Cairo, Egypt.
Phone : (+202) 516-6170 / 1 / 4
Fax : (+202) 516-6177

The Population / FP IV Team :
Pathfinder International (PI)
Family Health International (FHI)
Johns Hopkins University Center for Communication Programs (JHU/CCP)
Management Sciences for Health (MSH)
The Futures Group International (TFGI)

APPENDIX VII. – AN ASSESSMENT OF EPTC'S CONTRACEPTIVE INVENTORY INFORMATION SYSTEM (CIIS)

AN ASSESSMENT OF THE CONTRACEPTIVE INVENTORY INFORMATION SYSTEM (CIIS) AT THE EGYPTIAN PHARMACEUTICAL TRADING COMPANY

Prepared by:

Luigi Jaramillo, MIS & Contraceptive Logistics Advisor

Population/Family Planning IV Project
Pathfinder International

June 19, 2001

106

TABLE OF CONTENTS

I. Background

II. Reasons for Implementing this Assessment

III. The Assessment - Main Findings

a. Management of the CIIS
b. Software of the CIIS
c. Hardware of the CIIS
d. The Staff managing the CIIS

IV. Recommendations / Conclusions

I. BACKGROUND

The Egyptian Pharmaceutical Trading Company (EPTC) has been managing the logistics of contraceptive commodities in Egypt for over 15 years.

The scope of their work includes warehousing, packaging, and distribution of USAID donated contraceptives destined for the Ministry of Health and Population of Egypt (MOHP) as well as contraceptives from numerous sources destined not only for the MOHP but to be dispensed through numerous pharmacies and NGOs. The entire process is monitored through the EPTC's management information system known as the Contraceptive Inventory Information System or as the CIIS. EPTC has been trusted the managing of commodities through a joint agreement between the EPTC, the MOHP, and USAID.

The Phases of the CIIS:

a. **First Generation:** The CIIS was originally a system installed with USAID's financed technical assistance through the Center for Disease Control (CDC) almost 15 years ago. This original system to which I will refer from now on as the 1st Generation CIIS, was built at a time when database driven systems did not exist and was developed using a tool called InfoStart an application from the same software company that developed the then popular word processor Word Star. The data storage is based on a collection of text tables. After these text tables reach a given size, they are saved as Master Tables. The collection of these Master Tables comprises the entire set of historical data.

b. **Second Generation:** Four years ago, as the family planning program in Egypt evolved and grew to achieve higher rates of contraceptive prevalence, the original CIIS was inadequate to process an ever-increasing number of records (Invoices) from an increasing number of sources (pharmacies, NGOs, etc.). The need to develop a new system arose, a system that could be run in a local area network so that more than one computer can be used to enter data. One obsolete computer (IBM XT) was simply not enough to allow the processing of increasingly large number of records.

   USAID responded by requesting the technical assistance of CDC. A used LAN no longer needed in Atlanta was installed at the EPTC and a new CIIS was developed. The new version, the 2nd Generation CIIS, was developed in MS Access for a Windows environment and was installed in the donated Novell driven Local Area Network (LAN). This second generation was basically an upgrade of the 1st generation but was based on a relational database and capable of running in a LAN. The primary advantage of the 2nd generation CIIS over the previous 1st generation was that it allowed for several people to enter data simultaneously and a few graphs complemented all existing reports. In addition, the donated (old/used) LAN with a file server and

eight workstations represented a significant improvement in hardware technology from the previous one IBM XT PC.

c. **Third Generation:** One year after the development of the 2nd Generation CIIS and while the 2nd Generation was still in its testing stage, technical support from a team of developers from CDC/Atlanta came to and end due to lack of funding for continuing this activity. Until this time (1999), the 1st and the 2nd generation system were running parallel and both were being maintained until all bugs within the 2nd Generation CIIS were removed.

Two years after the development of the 2nd generation CIIS, the EPTC underwent internal changes in management. These changes triggered the need to develop an organizational Management Information System that monitors all kinds of goods managed through the EPTC's network of warehouses. These goods included medical supplies, drugs, and in particular, contraceptive commodities.

The development of the EPTC system now known as EPTC NET was based on a sole set of standard codes for each product managed by the organization. Because of the new coding convention used, each contraceptive commodity was given a unique code, which identified the product and brand. The new codes, standard for all products, were unavoidably different from the codes used by the first and second generation CIIS systems. This situation led to the 3rd Generation CIIS.

The 3rd Generation CIIS was developed in-house by EPTC during the past year using Powerbuilder, one of the leading technologies for programming applications for Windows platforms. In addition, Sybase, the database engine was selected. This is one of the most powerful database management tools in the market today. Given the very large amounts of entries into the database per month (details follow in the following section of this report), the selection of this powerful technology was well justified. The 3rd Generation CIIS has been developed as a complementary module within the EPTC's overall MIS, the EPTC NET.

The 3rd Generation CIIS, like its predecessor, is a replication of the original 1st Generation CIIS developed a decade and a half ago. It is a replication in the sense that it includes all the reporting capabilities of the previous versions (all reports recently programmed and successfully tested). However, it represents a significant advance from both of its predecessors to what is becoming not just an MIS, but also a decision support system for the EPTC commodities management team. The advantages represented by the 3rd Generation over the previous versions are listed below:

- Consistency with EPTC's organization's main database engine (Sybase Adaptive SQL Server)

- Consistent with EPTC's organization's main developing platform (Powerbuilder 6/7)
- Consistent with EPTC's MIS (EPTC NET) product coding conventions.
- In-house capability for enhancing systems available, bringing to an end dependency on overseas technical assistance.
- Data processing capabilities including speed and reporting greatly enhanced.
- Data recovery mechanisms significantly more reliable.
- Ability to maintain increasing number of records without the need to partition tables into sets of records known as Master Tables.
- 3rd Generation CIIS scalability established and ability to cross-analyze data with other MOHP data sources (Also Sybase databases) established. This is the case with the MOHP's Integrated Consumption / Distribution System).
- Brings the necessary technology (Sybase's Remote Replication Technology) for keeping databases at the various warehouses synchronized (Today, half of the EPTC's network of warehouses are connected to HQ's LAN).
- Includes one of the most powerful report generators in the market today capable of generating reports complemented with graphs and allowing the user to instantly drill down to lower levels for data analysis.
- Capable of connecting to any type of data available through ODBC , JDBC, and OLE DB (Industry standards for database connectivity).

II. REASONS FOR IMPLEMENTING THIS ASSESSMENT

This assessment of the contraceptive inventory information systems within the EPTC was the result of the recommendations of a meeting held at EPTC on the 11th of March of this year. At this meeting, representatives from the MOHP, USAID, EPTC, and Pop IV were present. The objective of the meeting was to address inconsistencies in recent data reports encountered, as well as delays in submission of data.

The importance of this assessment is also influenced by the fast changes in the family planning industry in Egypt which include among other important issues: a) an evident USAID (donor) assistance phase out, b) building of in-house capacity for managing commodities, including information systems, c) growing role of the private sector and the implications on the future role the EPTC will provide to both the private and public sectors.

III. ASSESSMENT – MAIN FINDINGS

a. Management of the CIIS: As mentioned earlier, the EPTC has been managing the CIIS on behalf of the MOHP for over a decade. During the majority of this time, the turnover rate within the staff has been minimal and this fact has lead to the generation of an institutional know-how seldom encountered in other national public sector family planning programs. Thanks to this fact, the EPTC has played a major role at assisting both public and private sectors not only in the procurement of contraceptive commodities, but also in the warehousing, repackaging, and distribution of these commodities to numerous outlets across the country. In addition, the EPTC has played an important role in assisting USAID in the preparation of the annual Contraceptive Procurement Tables (CPTs) with the CIIS providing the necessary historical data on distribution so important for projecting future contraceptive demand.

Recently however, there has been a set of activities within the EPTC that have generated significant changes in how the CIIS is managed. The EPTC has indicated for a number of years its intention to become fully privatized (from a paraestatetal organization). Early this year, EPTC announced that by the end of March, 60% of the organization would have been sold to private investors. This activity triggered significant changes within the team managing the CIIS. During the last two years, the executive management of the CIIS has had three different directors given them limited time to acquire the historical background to fully understand the importance of contraceptive commodities for the national family planning program, thus influencing the priority given to contraceptive commodities logistics management within the overall organization's MIS development activity (CIIS vs. EPTC NET). One example is illustrated. No computer equipment within the EPTC's recent procurement was utilized to strengthen the equipment running the CIIS. In addition, training of personnel in Powerbuilder and Sybase was solely planned and implemented for the staff in charge of developing the EPTC NET.

The MOHP and USAID have played major roles throughout the past 10 years in maintaining the EPTC's CIIS team involved and engaged in planning and decision making for procurement and overall logistics of contraceptive commodities. Nonetheless, because of the recent management and changes within the EPTC, the periodic contact with the EPTC's CIIS staff has taken place with less frequency. An important event for EPTC, and one that helps prioritize contraceptive commodities management has been the annual and semiannual visits by Carl Hawkins from USAID Washington. Through his visits, technical assistance is provided, skills are transferred. Additionally, EPTC plays an important role in the preparation of the annual CPTs. This activity did not take place during 2000, and this year, while the 2002 CPTs were prepared, the EPTC played a less significant role limited mainly to the provision of distribution data.

Staff turnover continues to be a major problem, not only at the EPTC, but with other settings. The MOHP/Population Sector and the System Development Project has also undergone significant staff changes, and these changes have also influenced the involvement and engagement of the EPTC's CIIS management team. Executive management of the SDP has changed three times during the past four years, affecting the project's historical know-how and partnership with the EPTC.

At the EPTC while middle management practically remains unchanged, the new executive management of the EPTC Information Center (which in addition to the EPTC NET also manages the CIIS) is yet to become acquainted with the importance of the contraceptive logistics management for the national family planning program and this fact, in a way has led to the establishment of different priorities for different activities within the EPTC Information Center.

Recent and current executive management have prioritized the development of the EPTC NET. To achieve this goal, part of the staff originally assigned for the development and maintenance of the CIIS has been reallocated. CIIS staff has been encouraged to be part of the EPTC NET development activities since this work is paid at a significantly higher rate than work for the CIIS. This is an important reason why the CIIS has been in a way given a lower priority within the ongoing MIS development activities at EPTC.

Data inconsistencies and delays encountered by the MOHP and USAID staff triggered this assessment and are in a way, the result of the combined management changes mentioned in this section of this report.

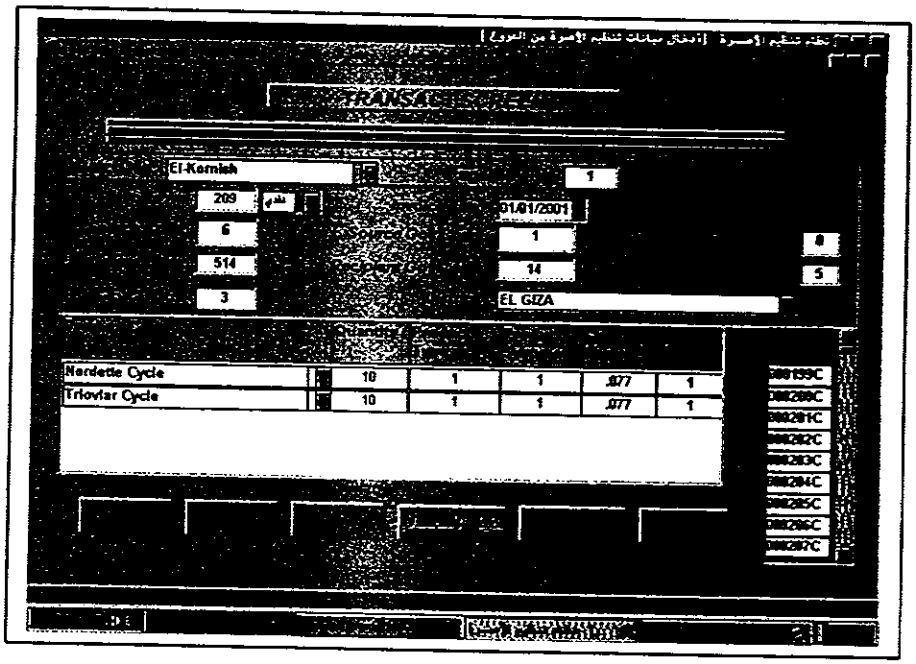
b. Software of the CIIS: As mentioned earlier in this report (Phases of the CIIS), the current version of the CIIS (Third Generation) represents a graduation to a decision support system for the EPTC and the MOHP. It has been developed using one of the most advanced tools for data processing and very adequate for the large volume of data stored through both the CIIS and the EPTC NET.

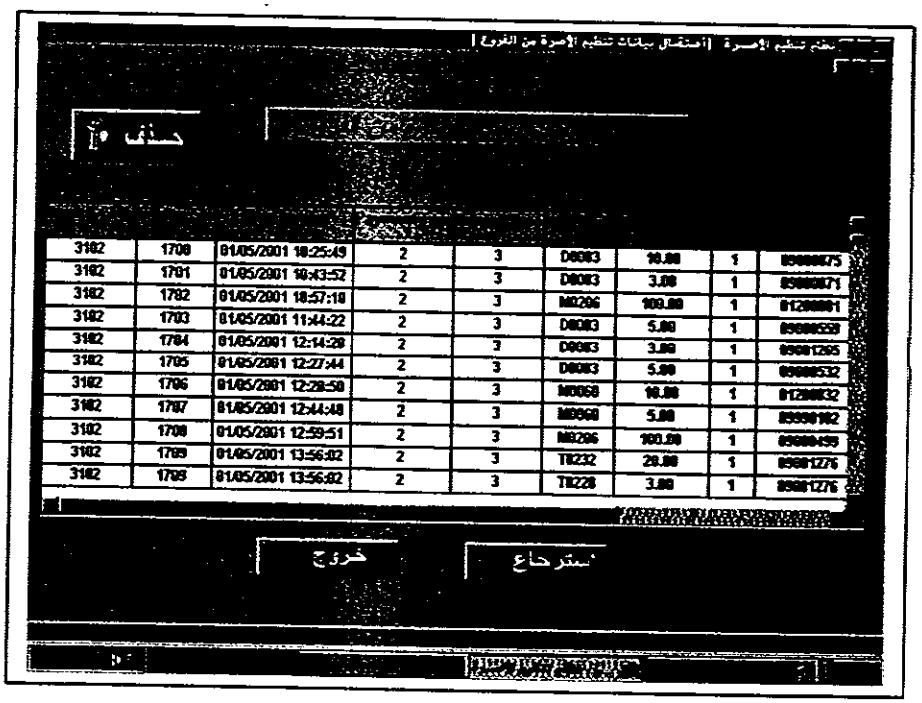
The 3rd Generation CIIS is an evolving decision support system as it provides for the first time, data reporting for the screen, allowing the user to select the desired report parameters, view data on the monitor, and make decisions without having to go through numerous pages of printed material.

In addition, the report generator available is far more powerful than the ones used by the previous generations of the system and it supports Arabic language.

A sample of the reporting capabilities of the new system can be best illustrated with the following screen samples:

Screen Samples of the 3rd Generation CIIS



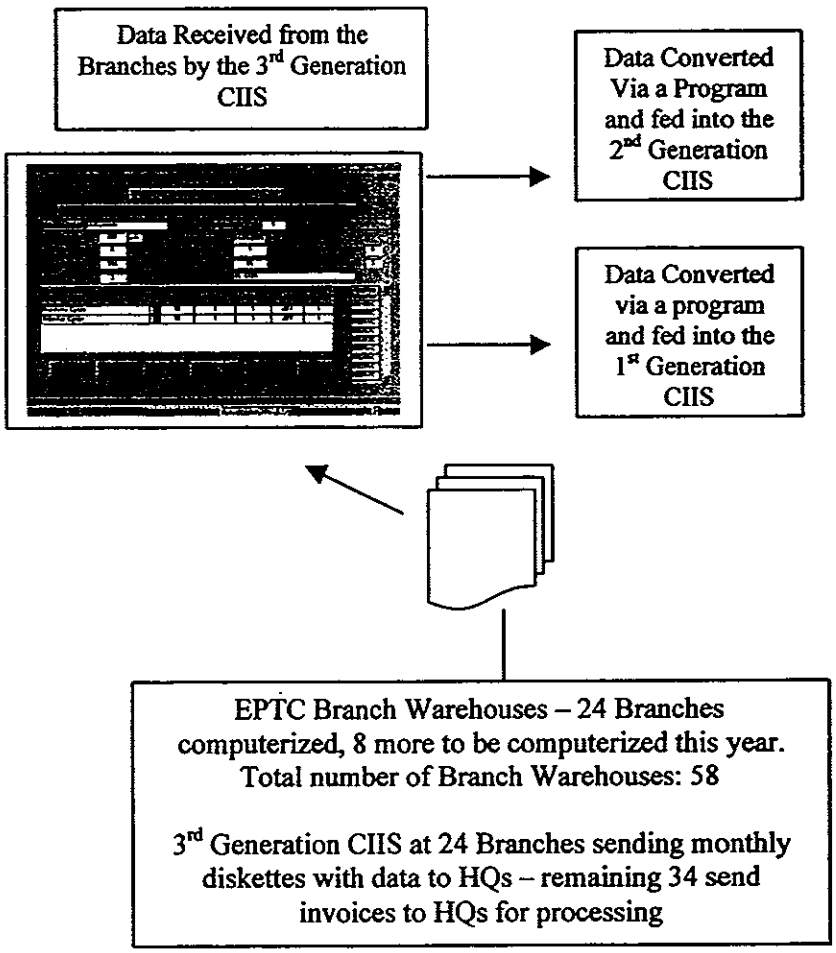


The current 3rd Generation is still in the testing stages. Today, all three systems are maintained at different levels and reports are generated through all systems.

113

How does the data flows through the three systems can be best described in the following chart:

Chart 1. – Data Flow Through the CIIS



As illustrated in the above chart, all systems are being maintained. Although the transfer of data for the 1st and 2nd generations is made via an interface program, it still represents the use of valuable and limited resources for the maintenance of three systems. The reasons given for maintaining this situation are listed below:

- Permission required by MOHP and USAID to abandoned the 1st Generation CIIS.
- The 2nd Generation CIIS still generates a set of unique reports not yet programmed under the 3rd Generation CIIS.
- The 2nd Generation CIIS contains several bugs and the numbers do not match the calculations generated by the 1st and 3rd Generations.

Maintaining three systems can prove to be a difficult non sustainable task, especially when in addition to this function, the limited staff is also involved in the development of EPTC's EPTC NET. We recommend that resources be allocated so that the staff can complete

the 3rd Generation CIIS. After successfully testing the system, a formal order for the discontinuation of the previous system should be issued by both the MOHP.

The 3rd Generation CIIS once completed (Application with all reports programmed) can be further decentralized down to the remaining 34 branches yet to be computerized. It is important to emphasize that the computerization of both HQs and the branch level warehouses has been an activity funded and implemented with internal EPTC funds.

The importance of this last statement is that the CIIS although developed in-house by the EPTC staff, because of the contract / agreement between the EPTC, USAID, and the MOHP, the tool is still seen as external to the organization and its maintenance as an activity that should be funded in order for it to continue. For this reason, it does not enjoy equal importance and priority as the EPTC NET, which was entirely developed and funded with EPTC funds. The necessary political support has to be built within the organization so that both systems could be integrated and run using the recently acquired network equipment sufficient enough to house both systems.

The CIIS is important as a tool for decision making and planning for the MOHP and the EPTC. The cost of maintaining the system should be a joint effort between the two organizations. In this context, USAID needs to review its role as a donor within its phase-out plans.

c. Hardware of the CIIS: In hardware as in software, the current CIIS is now riding on a state of the art computer equipment purchased and funded by the EPTC. It is important to emphasize, that although this is the case, the recently acquired equipment is intended for the development and implementation of the EPTC NET. For this reason, complete access to the new equipment for maintaining the CIIS is still highly monitored and controlled by the engineers and managers of the EPTC NET.

Currently the CIIS has at its disposition only obsolete equipment. The 1st Generation is maintained through an old IBM XT while the 2nd Generation is maintained through a used and old Novell LAN donated by CDC approximately five years ago. The 3rd Generation as we mentioned earlier, could be thought as running on rented / lend time under the recently procured computer equipment destined only for the EPTC NET. These equipment include:

A Solaris Local Area Network using 4 Sun Microsystems servers and 8 workstations. One of these powerful networks has been installed at HQs with a similar network installed at each one of the 24 branch warehouses already computerized. All branch LANs are connected via modem with HQs. Purchasing similar equipment for maintaining the CIIS will be very expensive, not recommended, and not necessary. However, the MOHP should review the possibilities of building the

115

necessary agreement with EPTC so that the CIIS could operate with the new hardware on an equal level of priority as the EPTC NET.

d. Staff in Charge of Maintaining the CIIS: Perhaps the most important asset of the entire CIIS operation is the staff that manages it. The management of the CIIS, including data entry, data processing, report generation, data analysis is done through the combined effort of 14 staff members. The staff is highly qualified with extensive background in developing applications for Windows using Sybase and Powerbuilder.

Although a lot of the data entry is done at the branch warehouses, there are still 34 branches not yet computerized and they still submit their invoices for processing at headquarters. At this level, all the staff works as a team, although without a clear division of roles and responsibilities.

The staff allocated for the management and development of the CIIS operation is paid at a significant lower rate than their counterparts working for the EPTC NET. In the competition for resources, this puts the CIIS at a disadvantage. During the assessment meetings, the CIIS staff reported that they developed internally the 3rd Generation CIIS without any additional funding for this activity.

IV. RECOMMENDATIONS / CONCLUSIONS

The CIIS is an impressive operation and one that has been providing vital statistics to the Egyptian family planning program for a very long time. The applications and the reports are well designed to meet the needs of the users; in addition, the technology used ensures the system's long-term scalability.

The staff managing and developing the CIIS is highly qualified with an impressive track record of applying advanced programming techniques developing applications for Windows.

In terms of the application itself, the CIIS data collection and reporting capabilities meet the needs of even the most demanding logistics management operations.

Some recommendations / conclusions are provide below in no particular order of importance:

- The CIIS has been managed on behalf of the MOHP by EPTC successfully and this partnership should continue. To attempt to build a similar capacity at the MOHP will be time consuming, expensive, and non sustainable. Even large multimillion-dollar corporations hired outside institutions to manage their logistics. As an example, large worldwide corporations such as Dymler-Chrysler

institutionalized the concept of "just-on-time logistics", passing the cost of warehousing and distribution to third party organizations.

- The current version of the CIIS (3rd) is becoming a valuable decision support system. Still some work needs to be completed to ensure that the whole array of reports available through the previous versions is included in the new system's capabilities. It will represent significant benefits for the MOHP if assistance is provided for completing the CIIS, thus building ownership of the system and strengthening the partnership with EPTC. Once completed, USAID and the MOHP should approve the discontinuation of the previous two versions of the CIIS.
- The MOHP and the EPTC should jointly explore the necessary mechanisms for integrating the CIIS as part of the overall organization's MIS implementation (The EPTC NET).
- The MOHP and the EPTC should jointly review the current cost of managing the CIIS and to address whether the previous agreement needs to be revised in order to ensure that the CIIS has sufficient support in terms of the use of the latest computer equipment, software, and training for the staff.
- The current hardware used for maintaining and developing the CIIS is becoming obsolete. The IBM XT is over 15 years old and the LAN donated by CDC is equally based on a 5-year-old technology. There are 4 Pentium PCs, 75 MHz available for the development of the 3rd Generation CIIS; nonetheless, these machines are rather slow for managing such larger number of records. The CIIS staff has requested assistance to USAID for additional new equipment, no funds have been available, and perhaps this assistance should be directed to the main beneficiary of the CIIS, which is the MOHP.
- The CIIS manages approximately 8,000 records (invoices) per month. This in turn is equivalent to an average of 400 records per day. With 5 new computers at HQs, the CIIS staff could easily process an average of 80 records a day per computer (data entry) which in turn, assuming 4 hours (not too much to ask) a day of data entry activities, amounts to a comfortable 20 records per hour. In fact, given that the branch warehouses are already computerized and some of them are handling CIIS data entry, the number of records at HQs will be even lower.
- Both MOHP and USAID should continue to strengthen their presence at EPTC, particularly for orienting and engaging new CIIS executive management as an important member of the national family planning program.
- The CIIS computer staff should review its User's Guide and management procedures for ensuring consistency of data entry across all computerized warehouses.
- The CIIS computer staff across all levels needs re-fresher training on data entry procedures. There is under reporting of commodities distributed due to the fact that some warehouses are not sure whether or not free contraceptives are to be also recorded.

- The 3rd Generation CIIS Transfer capabilities focus mainly on sales and returns. Negative and positive adjustments are still not monitored through the system.

The CIIS was installed over 10 years ago to collect and process movement of contraceptive commodities through the EPTC network and to keep track of stock levels at all times, this assessment concludes that the original objective of the CIIS has been and it is being met successfully.

The CIIS as an application, like all other systems has gone through a process of modernization. Only two years ago, the system was running under DOS, a five generation old operating system with numerous limitations for processing data and generating reports. Today, the CIIS is close to becoming a Decision Support System for the EPTC and more important, for the MOHP. It will be very valuable and recommended that the MOHP further invest in the process of modernizing the CIIS (3rd Generation), and although managed by the EPTC, to view it as jet another module within the MOHP/SDP MIS which is comprised of 9 different modules. Assistance to the CIIS management could be provided by including CIIS staff for training under the MOHP/SDP MIS training plan. In addition, the MOHP could allocate some of the recently received computer equipment for the managing of the CIIS.

Note: This assessment was prepared based on interviews with the MIS staff at EPTC and on reviews of the three generations of the system. The assessment included a detailed review of the systems databases, records, hardware, application (reporting capabilities and data processing methodologies), as well as the skills of the staff managing the operations. Some of the observations included in this report because of a degree of language barrier, were subject to the interpretation of the author, and only the author is responsible for any errors or misinterpretations here reported.

APPENDIX VIII. – A SYSTEM DESIGN FOR ENHANCING THE MOHP/SDP'S CLIENT SYSTEM

MINISTRY OF HEALTH AND POPULATION OF EGYPT—SYSTEMS DEVELOPMENT PROJECT

CLIENT SYSTEM

GRAPHICAL USER INTERFACE FOR THE SYSTEM MAINTENANCE AND DATA ENTRY SCREENS

FOR A WINDOWS 98—OS

MOHP / Systems Development Project—MIS
Monitoring and Evaluation Unit—October 2000

TABLE OF CONTENTS

I. Introduction

II. Client System's Objectives

III. How Does the System Works

IV. System Specifications / Data Collection Forms

V. Relational Database Design

VI. Database Dictionary

VII. Reporting Capabilities

VII. User Interface Design

I. INTRODUCTION

This document describes the requirements and specifications for the MOHP/SDP MIS' Client System which is currently being upgraded from a DOS to a Windows 95 version.

In particular, it responds for a request by the MIS Unit's director Dr. Mohsen Fathy for technical assistance in the programming of all Client System's system maintenance and data entry screens.

The upgrading of the system from its current DOS version into a Windows 95 environment is an activity being implemented by the MIS Team composed of both SDP and Pop 4 technical staff.

The relational database designed and the specifications used for building the windows included and described in this report were provided by Mr. Abdel Monem, director of the computer center at the MOHP/Family Planning and Population Sector/SDP.

Accompanying this document are the set of diskettes that include all the source code for the application. The system has been installed at the project's computer as indicated by Mr. Abdel Monem who will then proceed to build the Client System's reporting capabilities.

II. CLLIENT SYSTEM OBJECTIVES

The Client System represents one of the 10 Modules (Training, IEC, Client, QIP, Births/Deaths, Norplant, Financial, Revenue, Mapping, and PPIUd) comprising the management information system at the MOHP/Systems Development Project.

The Client System has been designed and built to provide executive directors and planners at the Ministry of Health and Population with a detailed description of the family planning program's performance.

The Client System's main task is to systematically monitor program activities by capturing and processing client specific information. The indicators tracked by the Client System are listed below:

- Amounts of contraceptives dispensed to clients (by method, by month, by health unit)
- Number of clients by age groups and parity
- Number of visits by method
- Total number of visits, new visits, and continuing visits
- Number of visits by reason (Obtain method, medical complication, follow up, IUD removal, etc.)
- Number of births, deaths, and maternal deaths (monthly, by health unit)
- Population associated to a particular health unit by year.

The Client System can be used by users to obtain answers to the following interrogations:

- What is the characteristics of the demand for the different contraceptive methods? And how does this demand changes through time?
- What is the characteristics of the clientele of the MOHP's family planning program? In terms of age? And number of children?
- How is the current work load by health unit distributed? In terms of visits by new clients, continuing clients, total number of visits?
- Why are the clients coming to the program? For obtaining a method? To resolve medical complications? For follow up?
- What are the rates of contraceptive use in the program? By health unit? By district? By governorate? For the entire MOHP family planning program?
- Which health unit, district, and governorate is providing the most family planning services? The least amounts of services?
- What are the average number of clients by unit, district, governorate, MOHP family planning program provided with services? For a specified time period (day, month, quarter, semester, or yearly)?

The upgraded version of the Client System described in this document brings the reporting capabilities to high new levels, allowing users to view data and analysis

fast on the screen for a variety of selected options by just pointing and clicking with a mouse.

This document describes the newly upgraded Client System from its previous DOS based system to a more powerful version for Windows 2000 and built using state of the art information system technology. The relational database engine processing the data is Sybase SQL Server and the reporting capabilities and user interface was built using Powerbuilder. Both Sybase and Powerbuilder are compatible with all existing database system and are the two platforms selected for upgrading all MOHP/SDP MIS's modules from DOS to Windows. Building the in-house capacity to develop and maintain these system has been part of the Pop 4's SDP/MIS implementation plan. All training has been completed as scheduled in the implementation plans.

III. HOW DOES THE CLIENT SYSTEM WORKS – DATA FLOW

The steps involved in the collection and processing of data through the Client System are summarized in the following chart:

Head Quarters in Cairo receive diskettes from all 27 governorates and data is appended into the systems database. Reports are generated and form part of the SDP's quarterly reports and disseminated to relevant parties.

Data processed b puter, data sent vi

Governorates compile all information received by diskettes and appends them to the Client System's databases with the use of built in append procedures and submits the compiled information to Head Quarters in Cairo

Data processed omputer, sent via diskette entium PCs

Districts compile all information and enters it into the computerized systems and sends diskettes on a monthly basis to the governorate level family planning units

Data processed nd, reports sent

Health Unit's submit data collection forms to the district level family planning units

IV. SYSTEM SPECIFICATIONS / DATA COLLECTION FORMS

Information for the Client System is collected and processed through the system through the use of five data collection forms. These forms are painted below and they are intended in this document for illustration only:

Form 1. Commodities Dispensed to Clients

Unit Code: __ . __ . ___ Unit Name: _____

Month: _____ Year: _____

Method	Quantity Dispensed to Client
Condoms:	_____
IUDs:	_____
Injectables:	_____
Orals:	_____
Foaming Tablets:	_____
Norplant:	_____

This form will contain all methods registered in the system and is submitted by each unit in a monthly basis.

Form 2. Clients by Age and Parity

Unit code: __ . __ . ___ Unit Name: _____
Month: _____ Year: _____

Clients by Age Group		Clients by Parity	
Less than 20	_____	0 Children:	_____
20 to 24 Years:	_____	1 Child:	_____
25 to 30 Years:	_____	2 Children:	_____
31 to 34 Years:	_____	3 Children:	_____
35 + Years:	_____	4 + Children:	_____

Family Planning Staff

	Doctors	Nurses
Trained:	_____	_____
Not Trained:	_____	_____

This form is filled by each health unit in a monthly basis.

Form 3. Visits by Type of Visit

Unit Code: __ . __ . ___ Unit Name: _____
Month: _____ Year: _____

Total First Visits: _____
Total Secondary Visits: _____

Total New Clients: _____
Total Returning Clients: _____

This form is filled by each health unit on a monthly basis.

Form 4. Clients by Method

Unit Code: __ . __ . ___ Unit Name: _____

Month: _____ Year: _____

Method	Number of Clients Visiting by Method
Condoms:	_____
IUDs:	_____
Injectables:	_____
Orals:	_____
Foaming Tablets:	_____
Norplant:	_____
Total Number of Clients:	_____

This form is filled by each health unit on a monthly basis.

Form 5. Clients by Reason of Visit

Unit Code: __ . __ . ___ Unit Name: _____

Month: _____ Year: _____

Visit Reason	No. of Clients Visiting for this Reason
To Obtain Method	_____
For Follow Up	_____
To manage medical complications	_____
For IUD Removal	_____
Other Reasons:	_____

Form 6. Births and Deaths

Unit Code: __ . __ . ___ Unit Name: _____

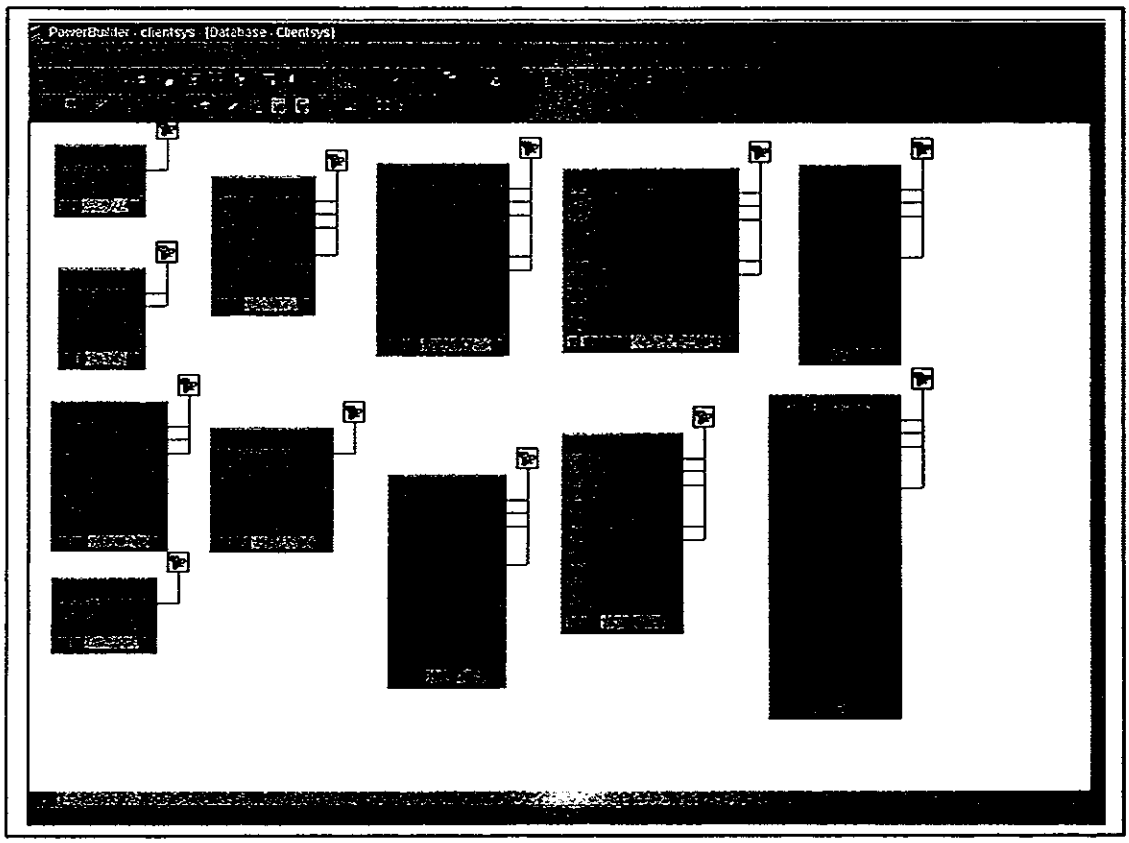
Month: _____ Year: _____

Number of Reported Births: _____
Number of Reported Deaths: _____
No. of Mother Deaths: _____

This form is filled by each health unit on a monthly basis.

V. RELATIONAL DATABASE DESIGN

The following relation database design houses the Client Systems tables:



This simple but yet comprehensive database design is composed of six support tables (governorates, districts, units, methods, unit population, and visit causes) and six tables to capture in each one, the corresponding data from the corresponding data collection form. The above design also describes all primary keys for each table. All Foreign keys were omitted to maintain clarity in this document.

VI. DATABASE DICTIONARY

Table / Field	Field Type	Format
Governorates		
Gov_code	numeric	##
Gov_name	varchar	Alphanumeric
Districts		
Gov_code	numeric	##
Dist_code	numeric	##
Dist_name	varchar	Alphanumeric
Units		
Gov_code	numeric	##
Dist_code	numereic	##
Unit_code	numeric	###
Unit_name	varchar	Alphanumeric
Unit_type	char	Alphanumeric
Unit_urb_rur	char	Alphanumeric
Methods		
Method_code	numeric	##
Method_name	varchar	Alphanumeric
Visit_Causes		
Visit_cause_code	numeric	##
Visit_cause_name	varchar	Alphanumeric
Unit_pop		
Gov_code	numeric	##
Dist_code	numeric	##
Unit_code	numeric	###
Pop_year	numeric	####
Tot_population	numeric	##########
Visits_by_cause		
Gov_code	numeric	##
Dist_code	numeric	##

Unit_code	numeric	###
Month	numeric	##
Year	numeric	####
Month_year	date	__/__/____
Visit_cause	varchar	Alphanumeric
No_of_clients	numeric	##########

Visit_by_method

Gov_code	numeric	##
Dist_code	numeric	##
Unit_code	numeric	###
Month	numeric	##
Year	numeric	####
Month_year	date	__/__/____
Method_code	numeric	##
No_of_clients	numeric	##########

Visits_all_methods

Gov_code	numeric	##
Dist_code	numeric	##
Unit_code	numeric	###
Month	numeric	##
Year	numeric	####
Month_year	date	__/__/____
Tot_clients	numeric	##########
Tot_first	numeric	##########
Tot_second	numeric	##########
Tot_new	numeric	##########
Tot_old	numeric	##########

Clients_by_age_parity

Gov_code	numeric	##
Dist_code	numeric	##
Unit_code	numeric	###
Month	numeric	##
Year	numeric	####
Month_year	date	__/__/____
Age1	numeric	##########
Age2	numeric	##########
Age3	numeric	##########
Age4	numeric	##########
Age5	numeric	##########
Child1	numeric	##########

Child2	numeric	##########
Child3	numeric	##########
Child4	numeric	##########
Child5	numeric	##########
Docstrn	numeric	##########
Docsntrn	numeric	##########
Nurstrn	numeric	##########
Nursntrn	numeric	##########

Method_dispensed_to_clients

Gov_code	numeric	##
Dist_code	numeric	##
Unit_code	numeric	###
Month	numeric	##
Year	numeric	####
Month_year	date	__/__/____
Method_code	numeric	##
Quantity	numeric	##########

VII. REPORTING CAPABILITIES

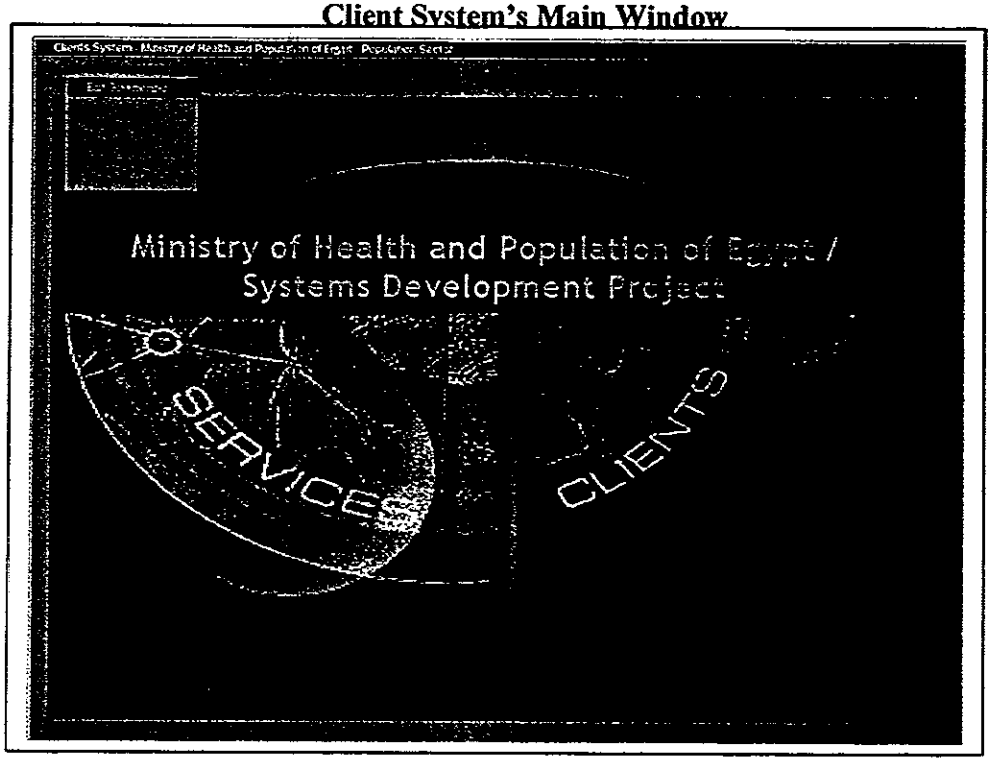
The following reports were identified as basic system requirements. They are included as an appendix (Appendix I.) of this document:

- Report 1 – Quarter Comparison by Visit Reason
- Report 2 – CYP Report
- Client Distribution by Method
- Client Distribution by Type of Client (New, Returning)
- Client Distribution by Age group
- Client Distribution by Parity
- Amounts of Contraceptive Methods Dispensed to Clients
- Client Report

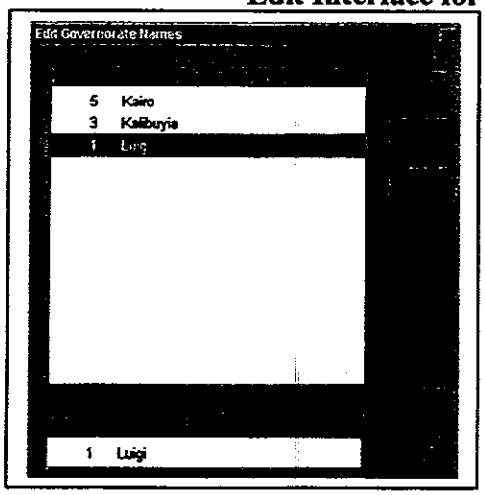
VIII. CLIENT SYSTEM'S USER INTERFACE

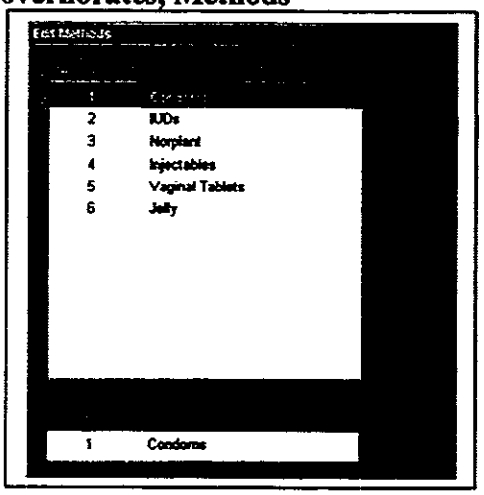
The user interface was designed and built using Microsoft Windows design standards and it is described in the following sequence of windows:

Client System's Main Window



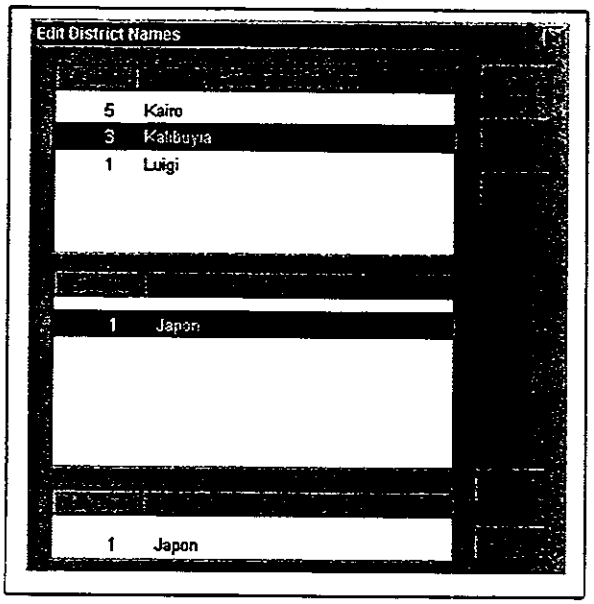
Edit Interface for Governorates, Methods

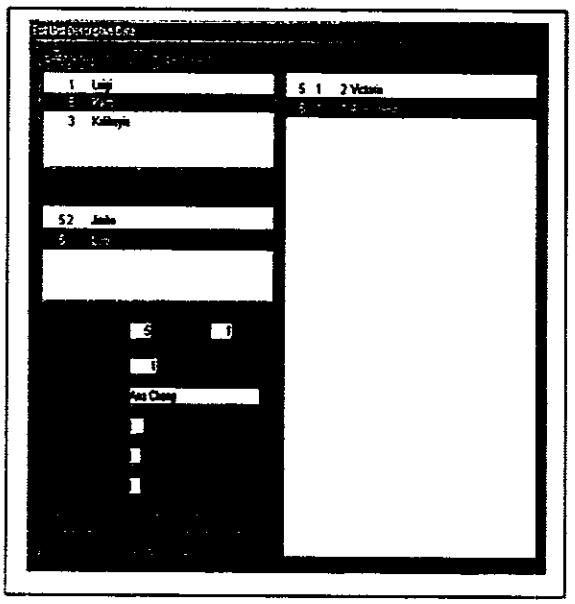


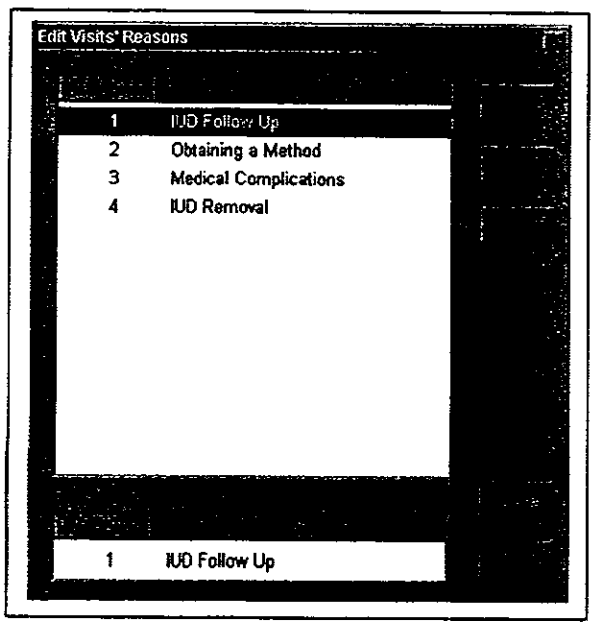


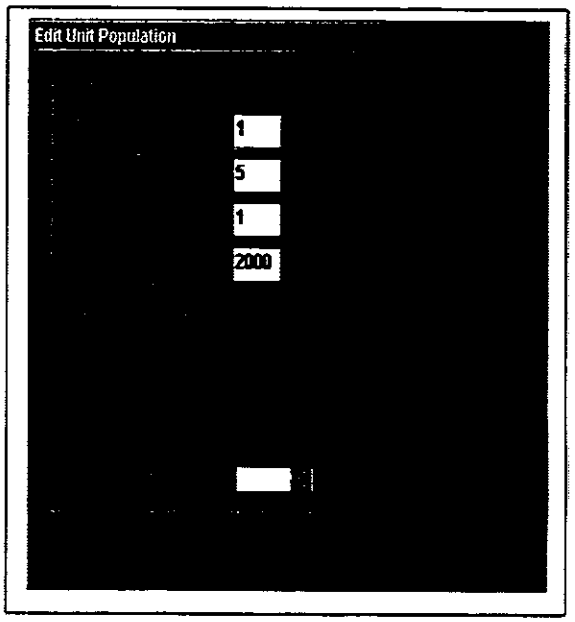
131

Interface for Editing Districts, Health Units, Reasons for Visit, Unit Populations





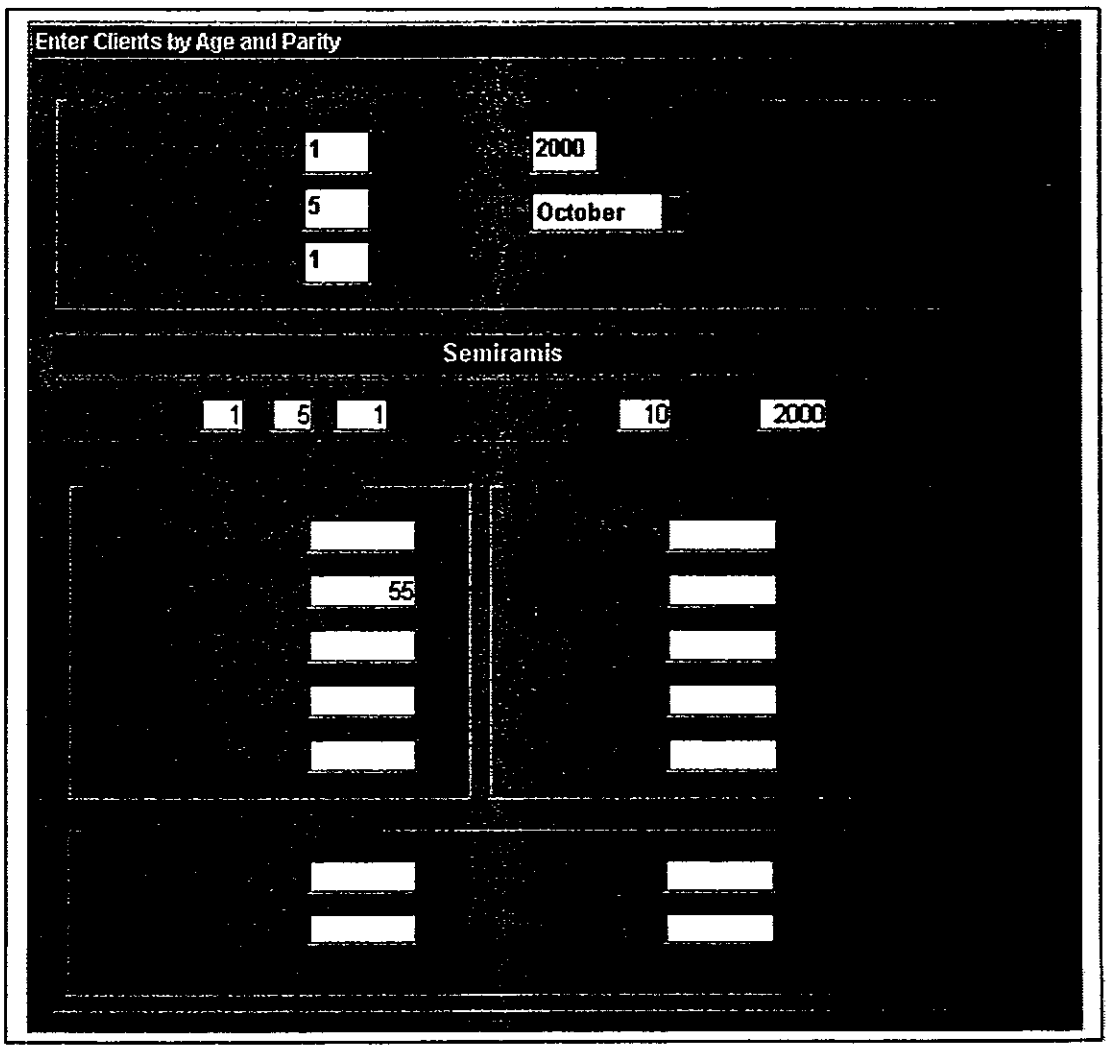




All the previous windows describe the interface for the system maintenance operations. It is through these screens that the user adds flexibility to the system by allowing the system to register for example new methods, new districts, new health units, new reasons for visit and so on. In this manner, the system will not fall victim of fast changing data collection needs.

Buttons for adding, deleting, and editing were kept standard across all system maintenance operations.

Interface for Entering Data from the Data Collection Forms– Clients by Age and Parity



Note: For expediting data entry operations, all forms from all health units MUST have on them not only the health unit name, but also the health unit code. Else the data entry personnel will have to point and click to find the respective health unit from the tables and this is a time consuming operations, particularly when dealing with over 4,000 data collection forms.

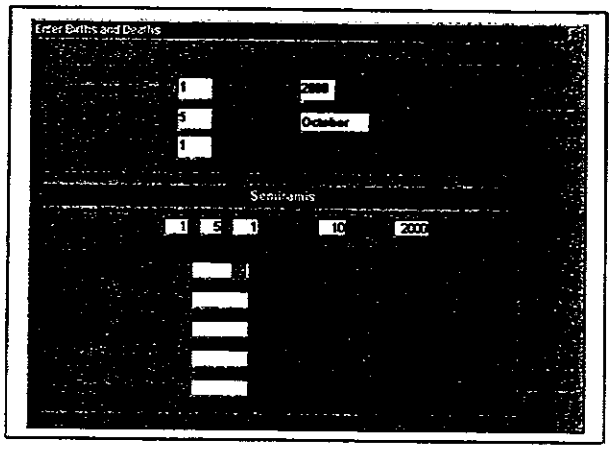
The user specifies:

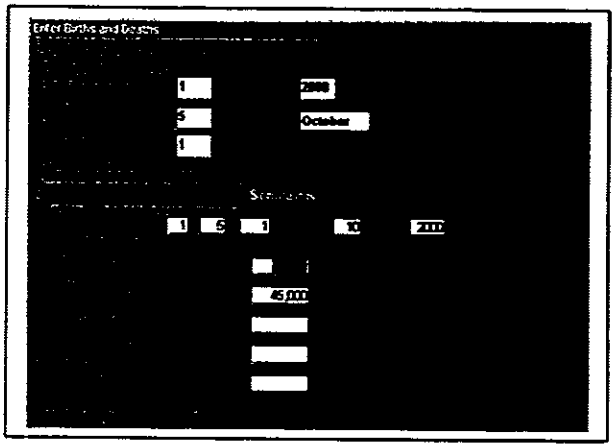
- The governorate code
- The district code (within that governorate)
- The unit code (within that district)

133

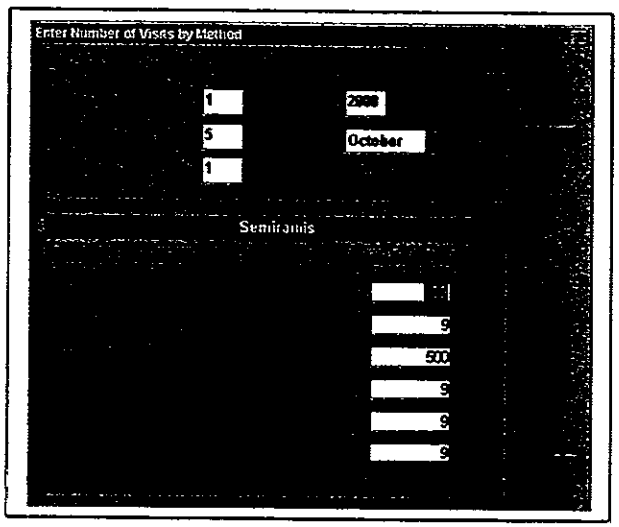
- The month and year for the data collection form

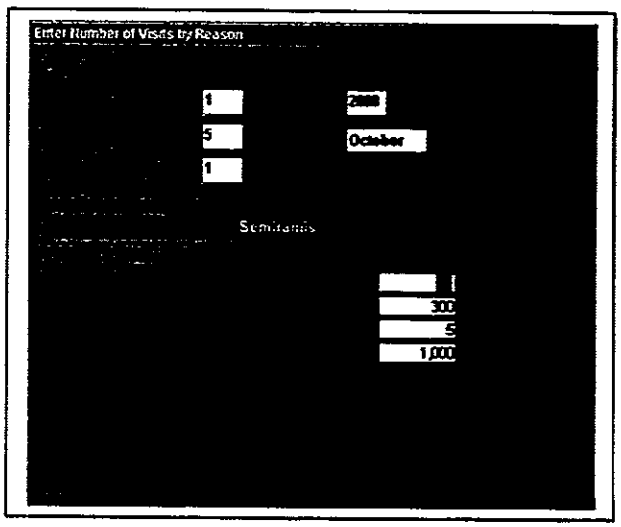
Interface for Entering Births and Deaths, All Visits





Interfaces for Entering Users by Method, Users by Reason for Visit

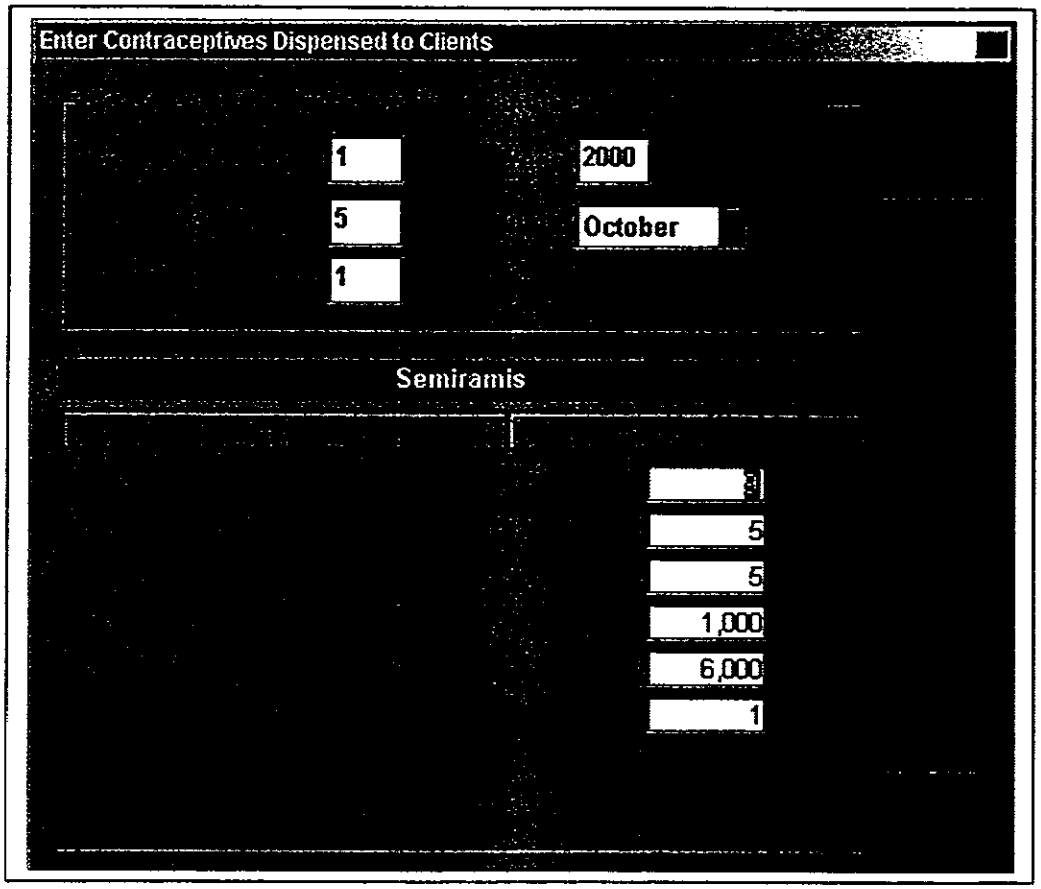




All buttons have been kept standard across all interfaces for entering the data collection forms. All fonts and colors selected have also been kept standard across all the system in compliance with proper Microsoft Windows design guidelines.

134

User Interface for Entering Contraceptives Dispensed to Clients



135