

Technical Report  
No. 54

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**Strategic Planning  
for the National  
Information Center  
for Health and  
Population, Two-  
year Business Plan**

*June 2000*

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Partnerships  
for Health  
Reform



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Partnerships  
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Reform

### ***Mission***

The Partnerships for Health Reform (PHR) Project seeks to improve people's health in low- and middle-income countries by supporting health sector reforms that ensure equitable access to efficient, sustainable, quality health care services. In partnership with local stakeholders, PHR promotes an integrated approach to health reform and builds capacity in the following key areas:

- > *better informed and more participatory policy processes in health sector reform;*
- > *more equitable and sustainable health financing systems;*
- > *improved incentives within health systems to encourage agents to use and deliver efficient and quality health services; and*
- > *enhanced organization and management of health care systems and institutions to support specific health sector reforms.*

PHR advances knowledge and methodologies to develop, implement, and monitor health reforms and their impact, and promotes the exchange of information on critical health reform issues.

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The opinions stated in this document are solely those of the authors and do not necessarily reflect the views of USAID.



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# Abstract

This document presents the results of strategic planning activities that were performed within the National Information Center for Health and Population (NICHP), the Ministry of Health and Population, Arab Republic of Egypt, during the period of June 2-19, 2000. The purpose of this activity was to develop a two-year strategic plan for the NICHP that would be consonant with the anticipated direction of the health care service delivery organizations within the Arab Republic of Egypt.

The focus of the strategic planning activities within the NICHP was:

- > To identify the information technology/information management aspects of these major forces anticipated to threaten the viability of the public health care delivery system;
  - > To identify the most likely productive activities for the NICHP to perform within the two-year period to assist the public health care sector to mitigate the operational risks;
  - > To assess the ability of the current assets of the NICHP to provide those products and services; and
  - > To develop a plan of action to achieve the desired objectives.
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# Acronyms

<b>EIS</b>	Executive Information System
<b>EU</b>	European Union
<b>HBS</b>	Hospital-based System
<b>HIC</b>	Health Information Center
<b>HIO</b>	Health Insurance Organization
<b>HIS</b>	Health Information System
<b>IM</b>	Information Management
<b>ISP</b>	Information System Plan
<b>IT</b>	Information Technology
<b>LE</b>	Egyptian Pound
<b>MOHP</b>	Ministry of Health and Population
<b>NICHP</b>	National Information Center for Health and Population
<b>ODC</b>	Other Direct Costs
<b>PBS</b>	Patient-based System
<b>PHR</b>	Partnerships for Health Reform Project
<b>TSO</b>	Technical Support Office
<b>USAID</b>	United States Agency for International Development



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# Executive Summary

This document presents the results of strategic planning activities that were performed within the National Information Center for Health and Population (NICHP), the Ministry of Health and Population, Arab Republic of Egypt, during the period of June 2-19, 2000. The purpose of this activity was to develop a two-year strategic plan for the NICHP that would be in consonance with the anticipated direction of the health care service delivery organizations within the Arab Republic of Egypt.

At the time of writing this document, there are multiple forces producing operational risks for the public sector health care delivery system. The forces can be broken down into categories such as:

- > Demographic processes;
- > Natural epidemiological processes;
- > Investment capital processes; and,
- > Technology adaptation (human capital) learning curve processes.

The focus of the strategic planning activities within the NICHP was:

- > To identify the information technology/information management aspects of these major forces anticipated to threaten the viability of the public health care delivery system;
- > To identify the most likely productive activities for the NICHP to perform within the two-year period to assist the public health care sector to mitigate the operational risks;
- > To assess the ability of the current assets of the NICHP to provide those products and services; and,
- > To develop a plan of action to achieve the desired.

The strategic planning work was conducted with the Director General, NICHP, Dr. Tayseer El-Sawy, his staff, and the Partnerships for Health Reform Project (PHR) hospital information systems long-term advisor. The project was under the oversight of the PHR Chief of Party. Other personnel have provided input into this effort in various ways: several of the PHR consultants (long-term and short-term), and the long-term advisors from the European Union and the World Bank.



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# 1. Mission Statement of the NICHP

Box 1 presents the Mission Statement of the National Information Center for Health and Population (NICHP) that was signed and released as a Ministry of Health and Population (MOHP) Ministerial Decree in 1998.

## Box 1. Mission Statement, NICHP

The National Information Center for Health and Population is the primary information services unit within the Ministry of Health and Population. It is responsible for the development and maintenance of a national MOHP information management (IM) and information technology (IT) system. Its authority includes national initiatives related to IM systems and technology, as well as consolidated data reporting services within the scope of the MOHP. All other MOHP units must inform, coordinate, and cooperate with the NICHP on matters concerning information management systems and information technology.

The primary objectives of the NICHP in constructing a MOHP national standard structure for IM and IT system are as follows:

- > To be the integration point within MOHP for health and health-related data and to be the central repository, or point of access, for all national health and health-related data;
- > To coordinate the design and development of integrated, effective, and appropriate information systems across the MOHP;
- > To promote the ready availability of and access to health information to support all of the organizational divisions of MOHP and the new health care reform initiatives;
- > To support the information management technology planning functions for the MOHP;
- > To establish cooperative relationships and information sharing with the governorate health directorates to improve their usable health information;

To achieve its mission, the NICHP is responsible for the following activities:

- > Planning, designing, implementing, and supporting IM and appropriate IT;
- > Establishing data management and IT standards for the MOHP information systems;
- > Collecting, processing, validating, and analyzing health information data;
- > Creating and maintaining cost-effective data- and results-sharing mechanisms for decision makers;
- > Designing, developing, and maintaining an Executive Information System that will be used by MOHP managers;
- > Supporting the top-level ministerial network;
- > Coordinating and supporting health information centers in governorate health directorates down to the district level;
- > Creating cost-effective and appropriate training mechanisms in the MOHP and the governorates;
- > Organizing, building, and maintaining a national library of public health information resources; and,
- > Providing public access to relevant public health information through several modalities including printed publications, Internet website, and other media.

Upon review of the mission statement with the NICHHP Director General, this statement of mission is carried forward and remains a valid business-planning object.

## 2. Stakeholders

The term *stakeholders* is used in this context to mean organizations or government offices that meet any of the following criteria:

- > Provide the MOHP the functional expertise of health care data;
- > Use NICHP products;
- > Contribute primary data as intermediate products for NICHP products;
- > Rely on NICHP products as intermediate products for their products; or,
- > Manage the Ministry of Health and Population.

The NICHP Director General has identified three types of core business relationships that the NICHP needs to create within its stakeholder list:

- > Direct Customers;
- > Customer-to-Customer; and,
- > Potential Business Partner.

The Director General recognizes that much of the functional expertise of health care data that will be necessary to meet core business information requirements will need to come from partnerships with other health care entities. The Director General also recognizes that within the scarce financial environment facing the NICHP, the NICHP will need to partner with other organizations to leverage resources, talents, and products. The Director General has identified the following stakeholders and the type of relationship they have with the NICHP. As Table 1 shows, the Director General envisions potential partnerships with several stakeholders.

**Table 1. Stakeholder Identification/Type of Relationship with NICHP**

Stakeholder Identification Organization	Type of Relationship		
	Direct Customer	Customer-to-Customer	Potential Partner
Office of H.E., The Minister	✓		
MOHP Sectors	✓		✓
Health Insurance Organization			✓
Population Council			✓
Demographic Center			✓
IDSC			✓
Central Agency for Public Mobilization and Statistics		✓	
Domestic & International Donors	✓		✓
Social Fund		✓	✓
International Technology Institute			✓



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## 3. Current Business Conditions

This section of the strategic plan outlines the *status quo* business conditions related to information management/information technology facing the MOHP. Section 3.1 presents an overview of major challenges, MOHP exposure and responses related to information management/information technology. Overviews of NICHP staff and physical assets are presented in sections 3.2 and 3.3, respectively. Section 3.4 presents an overview of NICHP products, services, and a high-level assessment of customer acceptance. Finally, section 3.5 presents an activity-based cost estimate for the NICHP.

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### 3.1 MOHP Challenges Related To Information Management/Information Technology

Working with the Director General, the following exogenous themes or trends were identified as pertinent to information management/information technology within the MOHP:

- > Future Service Delivery Crisis in Health Care as Demographic Trends Outpace MOHP Resources;
- > Increasing Transparency of Ministry Information;
- > Rate of Technology Maturity Life Cycle Creates Opportunities to Adopt Efficiencies;
- > Maturity of IM/IT Labor Market in Egypt;
- > Increasing Awareness of Need for Care Surveillance;
- > Future Service Delivery Crisis in IM/IT Support as Growth in User-Requirements Outpaces MOHP Capacity to Provide.

Table 2 presents the exogenous themes/trends, Ministry exposure<sup>1</sup>, and MOHP IM/IT responses that were identified as crucial for the NICHP over the next two years.

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<sup>1</sup> Exposure is used in a business context to describe the level of risk to achieving mission goals based on the net expected value of a given business condition or characteristic.

**Table 2. MOHP Challenges Related To Information Management/Information Technology**

<b>Exogenous Themes/Trends</b>	<b>Ministry Exposure (Green, Yellow, Red)</b>	<b>MOHP IM/IT Responses</b>
Future Service Delivery Crisis in Health Care as Demographic Trends outpace MOHP Resources	<b>Red</b>	Improve the timeliness and quality of MOHP data for decision-support. Improve effectiveness of healthcare delivery information mechanisms and systems.
Increasing Transparency of Ministry Information	<b>Yellow</b>	Integration of programs and systems Provide access to fundamental program information and data.
Rate of Technology Maturity Life Cycle Creates Opportunities to Adopt Efficiencies	<b>Yellow-red</b>	Adoption of network technologies at MOHP and approximately 5% of (340) MOHP hospitals.
Maturity of IM/IT Labor Market in Egypt	<b>Red</b>	Create partnership with International Technology Institute to recruit staff.
Increasing Awareness of Need for Care Surveillance	<b>Red</b>	Requirement to apply standards and practices for IM at national blood banks. Requirement to track and monitor Dx cancer patients.
Future Service Delivery Crisis in IM/IT Support as Growth in User-Requirements Outpaces MOHP Capacity to Provide	<b>Red</b>	Begun development of customer-focus in NICHHP service delivery. Begun process of prioritization of work based on need/urgency.

*Note: Red = certain mission critical threat; yellow = not expected threat to mission; green = certain not a threat to mission.*

The conclusions drawn from the activity of creating this table are that:

- > MOHP is facing multiple threats to its ability to function within the planning period;
- > The MOHP is facing multiple threats related to IM/IT issues within the planning period; and,
- > The public and private health care sectors within the Arab Republic of Egypt may be facing labor market inefficiencies within the professional domains of IM/IT services.

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## 3.2 Staff

See detailed NICHP Staff Matrix in the annex to this report.

A summary of the decomposition of staff by organization financing source is presented in Table 3.

**Table 3. Staff by Organization**

Organization	Number of Staff	Percentage
MOHP, NICHP	58	67.4%
Contract Staff	28	32.6%
Healthy Mother Healthy Child USAID Contract	3	3.5%
Information Technology Institute Contract Hires	9	10.5%
PHR USAID Contract	3	3.5%
University Research Corporation Contract	13	15.1%
<b>TOTAL</b>	<b>86</b>	<b>100.0%</b>

In general, the contract staff that have been brought into the NICHP represent the highest technical skill sets within the information center. These people are, by definition as contract employees, also those with the least structural reasons to stay with the NICHP in the future.

The NICHP faces difficult issues of recruiting, maintaining, and managing well-qualified technical staff. There do not appear to be policies within the Ministry to address the professional needs of information management and information technology professionals.

The NICHP also faces difficult issues dealing with the application of standards and conduct of its staff to a comparable level with state-of-the-art IT standards. The NICHP has made progress in this area but it appears that the NICHP would benefit from recruiting an experienced technical manager from a successful information technology environment to be responsible for these project management responsibilities.

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## 3.3 Equipment

Table 4 presents a summary of the equipment inventory that is maintained by the NICHP. The information is kept by equipment serial number by building by room number as the equipment was distributed across the Ministry campus location on Magles Al Shaab Street, Cairo.

**Table 4. Equipment**

<b>Asset Subcategory</b>	<b>Count</b>
550 15" Monitor	1
3 Drawers (Zen)	55
3-Drawers Black	22
Black Desk	11
Bookcase (4 shelves)	8
Cabinet N/Door - Short	8
Cabinet w/Door - Short	13
Coffee Table	2
Compaq Armada 1750	3
Computer Table (Zen)	3
Computer Table Grey	1
Conference Room Table	3
Corner 90	2
Corner Round 90 Graphic	1
Corner Table /Grey	1
Corridor Chairs	19
Couch 2 sets	1
Dell 15" Monitor	16
Desk 120	19
Desk 140	6
Desk 160	73
Desk 160 (Grey)	9
EPSON LQ -1170	1
EPSON Stylus Color 440	2
EPSON Stylus Color 800	1
EPSON Stylus Photo EX	2
Executive Chair	2
FAX Daewoo DF-1073T	1
File Cabinet 2 drawers (wood)	1
File Cabinet 4 drawers	31
Fortress 1020	3
Fortress 720	5
Gateway 15" Monitor	7
Graphic 3 Drawer	1
Guest Chair	7
Guest Chair (4 legs)	28
Guest Chair w/o Rollers	9
HP DeskJet 2500 CM	1
HP DeskJet 880 C	10

<b>Asset Subcategory</b>	<b>Count</b>
HP DeskJet 890 C	2
HP DeskJet 895 CXI	22
HP LaserJet 1100 SE	48
HP LaserJet 4	3
HP LaserJet 4000 N	8
HP LaserJet 5	8
HP LaserJet 6P	5
HP OfficeJet 350	1
Hydraulic Chair	85
Hydraulic Chair (Old)	16
IBM Monitor	5
Manual Meeting Chair	24
Meeting Room Chair	25
Metal Cabinet	7
NetUPS	9
Nordix 14" Monitor	1
Open Liberally Cabinet	22
Panasonic 15" Monitor	5
Panasonic 17" Monitor	2
ProGen 14" Monitor	42
QMS color	1
Round Table	3
Server	12
Side Table (Black)	6
Side Table (Zen)	37
Storage Cabinet	10
Switched Hub	14
TFT 500 Flat screen	2
TVM 14" Monitor	1
UPS APC 180	99
UPS APC Smart 1250	7
Umax	2
V500 15 " Monitor	117
V70	1
White Board	13
Wooden Chair (4 legs)	37
Workstation Desktop	113
Xerox DocuPrint XJBC	1
Workstation Tower	63

As shown in the table, this equipment list includes IT hardware and associated modern office equipment such as storage cabinets, computer desks and chairs, whiteboards, etc. The relevance of the associated equipment is high because in most instances the NICHP was deploying network workstations into locations where modern IM/IT accoutrements did not previously exist.

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### 3.4 Products

The NICHP did not function with formal operational boundaries of well-defined product line. It appears that the recent work of the NICHP can be broken down into the following four broad categories. For the purpose of this strategic plan, these broad categories have been called *Product Lines*; they are presented in Table 5.

**Table 5. “As-Is” Business Condition Assessment of NICHP**

<b>Product Line</b>	<b>Purpose</b>
MOHP Data Infrastructure Development	To improve the ability of source data collection processes to produce useful, timely, and accurate data
Special Systems Projects	To respond to emergent issues related to information management/information technology issues within the MOHP
MOHP Interoperability Infrastructure Development	To improve the ability to exchange data from source data collection processes throughout management and analysis stages within the MOHP
Technical Support Services	To maintain, support, and improve information management/information technology assets within the MOHP

After determining approximate product lines for the NICHP, the work of the strategic planning activity was to identify and assess the major NICHP products or services within each product line. Table 6 inventories the product line, products, status, and customers for each identified product or service. The table also presents a rough assessment of customer acceptance for each product.<sup>2</sup>

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<sup>2</sup> The ability to create a measurable and replicable metric for customer satisfaction was confounded by the fact that most of the products or services deliverable by the NICHP did not have mutually agreed-to criteria for development and/or acceptance. What is presented here is an assessment of customer acceptance that was developed by the strategic planning analyst as a result of conducting informal fact-finding interviews with various stakeholders of the NICHP. While the assessment is arbitrary, it has been conducted in a consistent manner and the major point of the analysis was to find what the NICHP has done well and what the NICHP has not done well.

Table 6. "As-Is" Business Model Preliminary Product Assessment

Product Line	Products	Status							
			TSO	Curative Care	Primary Care	Family Planning	USAID	EU/EC	World Bank
<b>MOHP Data Infrastructure Development</b>									
	HBS	Upgrade of existing Cost Recovery Application	?	◐	?	?	◐	?	○
	HIS	Health Directorate Support Unit maintains application/data analysis & training	?	◐	?	?	◐	?	○
	EIS	Version 1 available on Ministerial Network; Data updated to eoy 99	◐	◐	◐	◐	●	?	?
<b>Special Systems Projects</b>									
	PBS	Deployed to 4 pilot sites(alpha sites) in ALEX	○	?	?	?	○	?	○
	Blood Bank Modules	Proposal for private sector firm to provide an upgrade existing pilot application that includes web-based enhancements	○	●	●	●	?	?	?
	Cancer Registry Modules	3 of 7 cancer centers are running application, plan to finish deployment this year	◐	?	●	?	?	?	?
<b>MOHP Interoperability Infrastructure Development</b>									
	MOHP Website	Operational	○	?	?	?	?	?	?
	NICHP Intranet	Operational	?	?	?	?	?	?	?
	Ministerial Network	Deployed across HQ	◐	●	●	●	?	?	?

Product Line	Products	Status							
			TSO	Curative Care	Primary Care	Family Planning	USAID	EU/EC	World Bank
<b>MOHP Interoperability Infrastructure Development</b>									
	Hospital Networks	Phase A & B hospitals and other ad hoc facilities	◐	◐	◐	◐	?	?	?
	NICHP Resource Center		●	●	●	●	?	?	?
	Ministry "Public" Internet Access Stations		●	●	●	●	?	?	?
<b>Technical Support Services</b>									
	Training at Mounira	IM/IT classes; Data analysis classes; Administration for physicians' classes.	◐	●	●	●	●	?	?
	Ministerial Network Maintenance		●	●	●	●	?	?	?
	MOHP Website Maintenance		◐	?	?	?	?	?	?
	Training in Use of NICHP Products	Network, internet, EIS training	○	◐	◐	◐	?	?	?
	NICHP Intranet Maintenance		?	?	?	?	?	?	?

Notes: ● = High Acceptance; ◐ = Acceptance; ○ = Low Acceptance; ? = Not Known  
 EU = European Union; TSO = Technical Support Office; HBS = Hospital-based System; HIS = Hospital Information System; EIS = Executive Information System; PBS = Patient-based System.

The conclusions that can be drawn from this analysis are:

- > Structured relationships had not been established between the NICHP and its customers. The Director General has suggested that future work should include the creation of standard criteria between NICHP and customers to be able to manage expectations for product development and service delivery.
- > It appears that the NICHP performed relatively better at delivering core-level, or infrastructure-related, products and services that it did in delivering high-level end-user applications.<sup>3</sup> This performance relationship is likely to be a symptom of the relatively low

<sup>3</sup> This statement cannot be made broadly, however, because the NICHP did produce an Executive Information System that can be described as a high-level end-user application.

degree of business partnerships that were possible to be formed by the NICHP. The Director General has made it a priority to create core business partnerships to meet the two-year requirements.

### 3.5 Resources

Table 7 presents an estimate of the resource costs of the NICHP for the past year, based on cost data from the past two years. Activity-based cost analysis principles were applied to allocate costs to department work centers within the NICHP. Many instances presented themselves where NICHP staff worked in support of products in multiple departments. As an accounting rule and with no performance metrics to allocate costs to work performed, staff costs were assigned to the department that represented the dominant work activity of each staff member. The current analysis assigned personnel to each NICHP department and actual costs for contractors and MOHP<sup>4</sup> employees were then tallied to calculate the departmental costs.

The following table presents an estimate of the resource costs of the NICHP

**Table 7. "As-Is" Estimate of Departmental Resource Costs Based on Dominant Work Activity**

Department	Staff	Cost (L.E.) Month	Avg. Cost	Distribution of Avg. Department Cost to NICHP Avg. Cost	Avg. ODC Yearly L.E.	Cost (L.E.) Year
Administration	13	15,095	1,161	118.0%		181,140
NICHP Training and Development	5	7,735	1,547	157.2%		92,820
Information Resource Center	5	2,000	400	40.7%		24,000
Health Information Services Department	35	18,700	534	54.3%		224,400
System Design Development	11	25,900	2,355	239.3%		310,800
	<i>PBS</i>		2,467	250.7%		
	<i>HIS</i>					
	<i>HBS</i>	4	2,950	299.8%		
	<i>Website Development</i>	2	1,500	152.4%		
	<i>EIS</i>	2	1,850	18.%		
Health Directorate Support Unit	5	7,300	1,460	148.4%		87,600
Technical Network Support	7	13,800	1,971	200.3%		165,600
	<b>92</b>	<b>90,530</b>	<b>984</b>		<b>587,684</b>	<b>1,674,044</b>

Notes: LE = Egyptian pounds; ODC = other direct costs

The office bookkeeper within the NICHP prepared these costs. Attempts made to validate these costs included reviewing invoices and interviewing several NICHP managers. Table 8 presents the detail accounting of other direct costs for the NICHP.

<sup>4</sup> Most cases the MOHP costs tallied were actual costs per employee; in some cases an average cost was used based on the seniority and responsibilities of the Ministry employee.

**Table 8. Other Direct Costs**

<b>Other Direct Costs Detail</b>	
Supplies	103,284
Maintenance & Administration	40,000
Transportation	36,000
Per Diem & Lodging	234,900
Training Allowances	70,000
Training Services	103,500
Average Cost per Year L.E.	587,684

### **3.6 Strengths, Weaknesses, Opportunities, and Threats**

The last step necessary to complete the assessment of current business conditions was to facilitate the development of the strengths, weaknesses, opportunities, and threats (SWOT) of the NICHP. There are three purposes of identifying and elucidating SWOT:

- > SWOT provides a device to summarize the results of many analysis steps within the current business conditions assessment;
- > SWOT provides to an organization a powerful document from which organizational change can be bridged because it allows supporters and detractors to unite, agree, and start to compromise; and, finally,
- > The SWOT should be the foundation of future strategies and objectives.

The material presented in the following tables was obtained through review of NICHP documentation, discussions with the NICHP Director General, discussions with the PHR HIS long-term advisor, and fact-finding interviews with a few stakeholders of the NICHP.

#### **3.6.1 Strengths**

The strengths of the NICHP are presented in Table 9.

**Table 9. Assessment of Current Business Conditions: Strengths**

1. Top-level leadership supports the mission of the NICHP.
2. A business cultural change has begun for the centralized retrieval and dissemination of ministry data.
3. A business cultural change has begun within the NICHP for professional standards and conduct.
4. Modern and appropriate infrastructure such as computers, printers, high-speed cabling, NT workstations, MSOffice 2000, web-enabled programs and the Digital Dashboard have been rolled-out within the ministerial network.
5. Strong emphasis has been placed on human resource development with training provided by the NICHP in a new IT Center and the Mounira Hospital complex in Cairo.
6. It is likely that the MOHP is two years ahead of other Egyptian ministries in their implementation of IT.

Two important themes emerge from these six strengths:

- > The basic mission of the NICHP of the creation, management, and dissemination of standards for information management and information technology has acceptance and support at the senior level of the MOHP. A result of this is that vertical data programs within the Ministry are starting to reduce the barriers to data sharing with the NICHP which can lead to low cost horizontal data access through platforms such as the EIS.
- > The NICHP has deployed the necessary network infrastructure equipment within the Ministry campus to allow ministry personnel to use many value-added software applications that improve organization efficiency, communications, and project management.

### 3.6.2 Weaknesses

The weaknesses of the NICHP are presented in the Table 10.

**Table 10. Assessment of Current Business Conditions: Weaknesses**

1. There is a shortage of qualified IM/IT professionals within Egypt. <sup>5</sup>
2. There is a severe shortage of qualified IM/IT professionals within Egypt who understand the business of healthcare.
3. There is an extreme shortage of qualified Ministry staff that understand structured data analysis and design techniques.
4. There is no policy in the public sector of Egypt for competitive compensation of IM/IT personnel within the government.
5. The new junior-level IM/IT personnel within the NICHP are still learning health care functional business requirements.
6. NICHP has limited experience managing IM/IT staff.
7. NICHP has limited experience managing a 150-250 user network environment.
8. Customer acceptance of NICHP products and services is inconsistent and not optimal.
9. The private sector is not mature, support from vendors is not consistent but is improving.

The important theme that emerges from this list of organizational weakness is that:

- > For the NICHP to assist the MOHP to respond to the challenges related to IM/IT that were identified in section 3.1, most of which were assessed as high exposure to the MOHP, the NICHP is facing a labor supply problem. This problem has been dealt with over the past two years through various *ad hoc* solutions; however, to meet the pending demands on the NICHP, a structured approach to solving the labor supply problem will have to be crafted and implemented. It is not clear whether the local labor market can solve this problem without programmatic interventions to accelerate labor market advancements to provide labor with appropriate skills at appropriate wages.

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<sup>5</sup> In a recent article in *PC World Egypt*, June 2000, page 14 "Top of the News Department: IT Training": *The minister of communications and information technology, Ahmed Nazif, and Cisco Corporation signed an agreement to proactively address Egypt's lack of skilled IT engineers. A two-part agreement consists of a technology-planning program, a \$1 billion, three-year investment program aimed at establishing an Egyptian high-speed telecommunications network and a human-resources development program.*

### 3.6.3 Opportunities

Table 11 presents the opportunities for the NICHP.

**Table 11. Assessment of Current Business Conditions: Opportunities**

1. With the new technology both deployed and available, the MOHP is better positioned to respond to enact information change.
2. The Ministry has positioned technology to immediately begin the use of electronic mail, scheduling, on-line news, Executive Information System, health sector internet links, report dissemination, and internet access on the ministerial network.
3. The NICHP is positioned through its local area network and its Executive Information System to engage stakeholder ownership within ministry sectors in the dissemination of their data.
4. The Ministry is positioned to incorporate the use of web-enabled functionality and data design procedures within current and future development initiatives.
5. The Ministry is positioned to leverage the MOHP Website <sup>6</sup> for internal and external markets and information dissemination purposes.

The emergent theme of this list of opportunities is:

- > That the NICHP has implemented technology that can result in productivity savings for the MOHP. The local area network has applications on it that would create productivity savings for senior staff of the Ministry. The network would also create productivity savings by allowing file sharing among senior MOHP staff. The Ministry website creates an opportunity to use the website for public health marketing, collaboration with international agencies, and creating a marketing profile that attracts outside government of Egypt funding sources.

### 3.6.4 Threats

Table 12 presents the threats to the NIHCP.

**Table 12. Assessment of Current Business Conditions: Threats**

1. Change of ministerial leadership that would not have the same level of MIS support.
2. Resource limitations that would interrupt the rollout of new technology and reduce the MOHP's ability to utilize the technology in daily operations.
3. Management and/or resource constraints that would impact on the ability of the NICHP to recruit and maintain IT professionals.
4. Retrenchment of Ministry sectors limiting access to data in timely fashion.
5. Resource limitations that would not support activity levels to provide services.

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<sup>6</sup> As of 16 June 2000, the MOHP website had been restructured and redesigned from the version that was in existence in 1998. The 16 June version provided a professional structure and logical flow of information. It was designed, however, with a dual-language form (Arabic and English) that creates both benefits and costs. The benefits of English content is that it allows external marketing targeted to English-speaking audiences, allowing collaboration with other international organizations. The cost of this approach is that content is required to be managed in two languages.

6. Governorate and/or district information centers have resource limitations that impact on the ability to meet interoperability goal.
7. Future Ministry budgeting for IT in salaries and other categories are not maintained at a level to support operations.
8. In the past, there has not been a high degree of coordination among the MIS sections within the Ministry: HIO, NTL, Family Health Fund; etc.

The important themes that emerge from the list of threats are:

- > The management environment within the MOHP may not be stable. If significant change occurs at senior levels of the MOHP, it may result in a loss of important Ministry sponsorship that the NICHP has enjoyed in recent years.
- > While the NICHP is responsible for IM/IT information management/information technology, the governorate health directorates will be responsible for the resources to deploy network technology among facilities in governorates and districts. Therefore, the NICHP is dependent on governorate health directorates for achieving its long-term goal of network interoperability across Egypt.
- > Future funding may impact NICHPs ability to assist the Ministry meet the challenges identified in section 3.1:
  - Î To recruit and maintain necessary staff ;
  - Î To acquire necessary physical assets; and,
  - Î To maintain stock of deployed assets.



## 4. Two-year Plan

### 4.1 Statement of Strategy, Goals, and Objectives

Table 13. Strategy, Goals, and Objectives

GOALS	OBJECTIVES
<b>I. NICHP to Create Business Partnerships to Provide Core Data Applications</b>	
<p>1. Ministry creates a multifunction Health Information System with a unit price point that allows most MOHP hospitals to be modernized with the use of IM/IT.</p>	<p>A. A collaborative process with partners that incorporates resources for each phase: i) Planning; ii) Development; iii) Installation; iv) Training; and, v) Ongoing Support and Maintenance.</p> <p>B. NICHP coordinates process but not necessarily takes lead on any/each phase of activity.</p> <p>C. Achieve a level of cross-program or cross-sector collaboration that improves the efficiency of the process and allows some degree of resource sharing.</p> <p>D. Advance HIS application and merge with similar applications to consolidate into a unified platform for hospital-level data collection, aggregation, and upward interoperability.</p> <p>E. Modernize and continue to deploy Cost Recovery Program's Hospital-based System to provide significant facility logistics information management capabilities.</p> <p>F. NICHP collaborates with proposed Epidemiology and Surveillance Program task force to assist in identification of IM/IT requirements and provide technical support in development as appropriate.</p>
<b>II. NICHP Continues to Support Establishment of Network Interoperability throughout Ministry Facilities</b>	
<p>1. Facilitate the development of network capabilities within governorate and district health information centers</p>	<p>A. Decentralized approach to development with the application of network standards and protocols.</p> <p>B. Provide specific technical assistance on cost-share basis.</p> <p>C. Use central-level visibility to act as an information resource center to help assure that governorate and District-level HICs: i) are aware of resources available and how to effectively use them and ii) plan for appropriate levels of bandwidth and other measures of capacity.</p>

GOALS	OBJECTIVES
<b>III. NICHP Targets Partial Funding from Outside Sources To Reduce Dependency on Ministry Resources to Meet Anticipated Escalating Demands for Capabilities and Services</b>	
1. Human resource department becomes financially self-sustaining	A. To provide necessary mission support to meet future escalating requirements. B. To facilitate building of partnerships.
2. System design and development Department captures some portion of its operations cost reimbursement	A. Cultivate a customer focus in development of applications. Recognition that customers are eventually either: i) end-users of the application or ii) end-users of the data generated by the application. B. Create partnerships with outside entities to identify sources of resources to support portion of operations.
<b>IV. Maintain Deployed Products And Find Partners To Support Products As Appropriate</b>	
1. Maintain software assets and hardware assets to improve customer acceptance of NICHP	A. Provide technical services to maintain data systems. B. Provide technical services to maintain hardware systems deployed. C. Adapt technology as appropriate to improve customer satisfaction, such as, GIS, etc.
<b>V. Continue To Provide Ad Hoc Technical Assistance</b>	
1. Provide mechanism for senior Ministry leadership to respond to emerging IM/IT requirements	A. Respond effectively and efficiently to emerging issues. B. Maintain high level of customer acceptance with response capabilities. C. Provide problem-solving skills related to IM/IT issues.
<b>VI. NICHP Creates Mechanisms To Attract And Maintain Professional IM/IT Staff</b>	
1. Create human resource development offerings to support the anticipated increasing needs of the NICHP/Ministry in developing and maintaining appropriately qualified staff.	A. To improve the ability of the Ministry to manage its information resources. B. To set standards of competencies within IM/IT positions. C. To improve the ability of NICHP staff to meet the requirements of IM/IT work within the Ministry.

## 4.2 High-level Plan

**Table 14. High-level Activity Plan by Strategy Element by Major Goal**

YEAR 1: FIRST HALF	YEAR 1: SECOND HALF	YEAR 2
<b>I. NICHP To Create Business Partnerships To Provide Core Data Applications</b>		
<p><b>Perform Analysis of Potential Business Partnerships</b></p> <ol style="list-style-type: none"> <li>1. Identify strategic resource requirements</li> <li>2. Determine probability of attaining those resources within existing sources</li> <li>3. Identify potential partnerships that would allow achievement of mission requirements</li> </ol>	<ol style="list-style-type: none"> <li>4. Continue to monitor resource requirements</li> <li>5. Continue to monitor potential partnership opportunities</li> <li>6. Continue to collaborate with new partners</li> <li>7. Monitor results of partnership activities</li> </ol>	<ol style="list-style-type: none"> <li>8. Continue to monitor resource requirements and potential partnerships</li> <li>9. Monitor existing partnerships and relationships</li> <li>10. Develop new partnerships as required</li> </ol>
<p><b>Cultivate a Customer Focus in Development of Products and Services</b></p> <ol style="list-style-type: none"> <li>1. Develop a structured process to capture, adjudicate, and validate customer functional requirements and/or system change requests.</li> <li>2. Investigate Ministry mechanisms to provide sources of revenue to cost share for ongoing operations.</li> <li>3. Develop process to estimate cost to complete and/or cost of operations.</li> </ol>	<ol style="list-style-type: none"> <li>4. Identify and target potential customers for services.</li> <li>5. Capture cost-shared/fee-for-service projects.</li> <li>6. Manage client relationships.</li> <li>7. Continue to identify and target potential customers for service.</li> </ol>	<ol style="list-style-type: none"> <li>8. Continue to develop customer relationships</li> <li>9. Continue approach to validation of customer requirements.</li> </ol>

YEAR 1: FIRST HALF	YEAR 1: SECOND HALF	YEAR 2
<p><b>Advance HIS Application and Merge with Similar Applications to Consolidate into a Unified Platform for Hospital-level Data Collection</b></p> <ol style="list-style-type: none"> <li>1. Identify and constitute cross-program/cross-sector working group to identify and validate user requirements.</li> <li>2. Establish business rules for: meeting, reporting, consolidating requirements, and sharing-resources.</li> <li>3. Identify COTS/GOTS applications to review.</li> <li>4. Establish criteria for completion of committee work.</li> <li>5. Establish procedures for validating end-user requirements</li> <li>6. Establish procedures for make v. buy decisions for validated user-requirements.</li> <li>7. Begin data requirements identification and COTS/GOTS review as necessary</li> </ol>	<ol style="list-style-type: none"> <li>8. Finish requirements identification</li> <li>9. Finish requirements validation</li> <li>10. Finish make v. buy decisions</li> <li>11. Create Application Plan for: <ul style="list-style-type: none"> <li>&gt; Modifications to existing products</li> <li>&gt; COTS/GOTS acquisitions</li> <li>&gt; Code development</li> </ul> </li> <li>12. Identify resources to implement Application Plan.</li> <li>13. Assign tasks to available resources</li> <li>14. Begin Application Plan</li> </ol>	<ol style="list-style-type: none"> <li>15. Complete Application Plan.</li> <li>16. Validate application with users for acceptance.</li> </ol>
<p><b>Modernize and Deploy Hospital-based System</b></p> <ol style="list-style-type: none"> <li>1. Continue development of modules.</li> <li>2. Create deployment plan for Phase C to complete activities.</li> <li>3. Implement Phase C activities.</li> </ol>	<ol style="list-style-type: none"> <li>4. Evaluate success of Phase C.</li> <li>5. Modify plans as appropriate.</li> <li>6. Assess local training requirements.</li> </ol>	<ol style="list-style-type: none"> <li>7. Develop plan for local training requirements.</li> <li>8. Implement plan for training requirements.</li> <li>9. Develop plan for next phase of deployment activity,</li> <li>10. Implement deployment activity.</li> <li>11. Develop plan for network maintenance requirements. Identify opportunities to outsource when appropriate.</li> </ol>

YEAR 1: FIRST HALF	YEAR 1: SECOND HALF	YEAR 2
<p><b>Collaborate with ESP Task Force to Provide Technical Support in Development of Information Requirements</b></p> <ol style="list-style-type: none"> <li>1. Initiate design of Information System Plan (ISP) that will support the program.</li> <li>2. Submit draft ISP to the task force for approval.</li> <li>3. Design and begin software development of governorate-and district-level system for the ESP.</li> <li>4. Finalize and approve ISP.</li> <li>5. Implement ISP.</li> <li>6. Initiate Phase 1 of training, installation and implementation of feeder systems.</li> </ol>	<ol style="list-style-type: none"> <li>7. Begin work on design and initiate software development of national-level system.</li> <li>8. Complete work for Phase 1 feeder system.</li> <li>9. Continue software development for national-level system.</li> <li>10. Start Phase 2 training, installation and implementation of feeder system.</li> </ol>	<ol style="list-style-type: none"> <li>11. Complete training and installation of feeder system.</li> <li>12. Complete development of national-level system.</li> <li>13. Validate national-level system with users.</li> <li>14. Deploy national-level system.</li> </ol>
<p><b>II. NICHP Continues To Support Establishment Of Network Interoperability Throughout Ministry Facilities</b></p>		
<p><b>Use Central-level Visibility to Act as Information Resource Center to Help Assure Governorate-and District-level HICs: 1) are aware of resources available and how to effectively use them; 2) plan for appropriate levels of bandwidth and other measures of capacity</b></p> <ol style="list-style-type: none"> <li>1. Create a prioritization-based implementation plan based on need, existing hardware environment, and type of facilities.</li> <li>2. Design a multiple-phased approach to deployment and implementation.</li> <li>3. Identify opportunities to outsource the network implementation and training work.</li> </ol>	<ol style="list-style-type: none"> <li>4. Implement Phase 1 activities.</li> <li>5. Monitor progress on completion of work and resource consumption patterns.</li> <li>6. Begin testing and validation</li> <li>7. Develop plan for providing training at governorate-level health directorates.</li> </ol>	<ol style="list-style-type: none"> <li>8. Complete Phase 1—validate results.</li> <li>9. Review process and architecture plans.</li> <li>10. Revise Phase 2 plans and implement.</li> <li>11. Test and validate.</li> <li>12. Follow-up with governorate health directorates.</li> </ol>

YEAR 1: FIRST HALF	YEAR 1: SECOND HALF	YEAR 2
<b>ii. NICHP Targets Partial Funding from Outside Sources to Reduce Dependency on Ministry Resources to Meet Anticipated Escalating Demands for Capabilities and Services</b>		
<p><b>Human Resources Department (NICHP) Becomes Financially Self-sustaining</b></p> <ol style="list-style-type: none"> <li>1. Investigate use of funding techniques within Ministry mechanisms to provide sources of revenue for training activities.</li> <li>2. Create a Center of Excellence within NICHP</li> <li>3. Develop lessons learned related to technology deployment in Egypt;</li> <li>4. Perform targeted marketing for opportunities to appropriately leverage experience and infrastructure.</li> </ol>	<ol style="list-style-type: none"> <li>5. Implement mechanisms</li> </ol>	<ol style="list-style-type: none"> <li>6. Monitor success of mechanisms for NICHP and customers</li> <li>7. Revise mechanisms as necessary</li> <li>8. Monitor success of Center of Excellence. In terms of technology successes and financing.</li> </ol>
<p><b>System Design and Development Captures Some Portion of its Operations Cost Reimbursement</b></p> <ol style="list-style-type: none"> <li>1. Develop a structured process to capture, adjudicate, and validate customer functional requirements and/or system change requests.</li> <li>2. Investigate Ministry mechanisms to provide sources of revenue to cost share for ongoing operations.</li> <li>3. Develop process to estimate cost to complete and/or cost of operations.</li> </ol>	<ol style="list-style-type: none"> <li>4. Identify and target potential customers for services.</li> <li>5. Capture cost-shared/fee-for-service projects.</li> <li>6. Manage client relationships.</li> <li>7. Continue to identify and target potential customers for service.</li> </ol>	<ol style="list-style-type: none"> <li>8. Continue to develop customer relationships</li> <li>9. Continue approach to validation of customer requirements.</li> </ol>

YEAR 1: FIRST HALF	YEAR 1: SECOND HALF	YEAR 2
<b>IV. Maintain Deployed Products and Find Partners to Support Products as Appropriate</b>		
<p><b>Maintain Software and Hardware Assets to Meet Mission of NICHHP and Improve Customer Acceptance</b></p> <ol style="list-style-type: none"> <li>1. Assess network performance and develop maintenance plan.</li> <li>2. Implement network maintenance plan.</li> <li>3. Assess levels of service required to support deployed software products: Cancer Registry, Blood Modules, EIS, HBS, HIS, etc.</li> <li>4. Assess capabilities of existing products to identify functional gaps, or places where new technologies can improve product. Develop a plan to incorporate new technology as appropriate to meet user requirements.</li> <li>5. Identify resources necessary to support software applications.</li> <li>6. Implement software maintenance plan.</li> <li>7. Create formal health sector support teams to respond to sector technical support needs.</li> <li>8. Develop quarterly customer satisfaction survey.</li> </ol>	<ol style="list-style-type: none"> <li>9. Continue hardware maintenance plan.</li> <li>10. Continue software maintenance plan.</li> <li>11. Implement customer satisfaction surveys.</li> <li>12. Develop actions in response to customer surveys.</li> </ol>	<ol style="list-style-type: none"> <li>13. Monitor customer satisfaction with deployed products.</li> <li>14. Adjust maintenance plans to respond to customers' needs.</li> <li>15. Work with customers to upgrade products as required.</li> </ol>

YEAR 1: FIRST HALF	YEAR 1: SECOND HALF	YEAR 2
<b>V. Continue to Provide Ad Hoc Technical Assistance</b>		
<p><b>Provide Mechanism for Senior Ministry Leadership to Respond to Emerging IM/IT Requirements</b></p> <ol style="list-style-type: none"> <li>1. Develop structured approach to emerging requests: Cost-to-complete, time-to-complete, and resource dependencies.</li> <li>2. Implement structured approach.</li> <li>3. Monitor emerging IM/IT issues as appropriate.</li> </ol>	<ol style="list-style-type: none"> <li>4. Monitor emerging IM/IT issues as appropriate.</li> <li>5. Monitor resources available to maintain <i>ad hoc</i> support.</li> </ol>	<ol style="list-style-type: none"> <li>6. Monitor customer satisfaction with <i>ad hoc</i> response.</li> <li>7. Adjust process to respond to customers' needs.</li> <li>8. Monitor cost-effectiveness of <i>ad hoc</i> response process.</li> </ol>
<b>Vi. NICHO Creates Mechanisms To Attract And Maintain Professional IM/IT Staff</b>		
<p><b>Create Human Resource Development Offerings to Support the Anticipated Increasing Needs of the NICHP/Ministry in Developing and Maintaining Appropriately Qualified Staff.</b></p> <ol style="list-style-type: none"> <li>1. Develop and implement a plan for developing internal staff and acquiring new staff as necessary.</li> <li>2. Develop a compensation strategy that enables IM/IT professionals to have a career path within the Ministry; at issue are salary structure, and costs to maintain professional knowledge in a rapidly changing field.</li> <li>3. Expand partnerships in labor market to improve flow of qualified candidates.</li> </ol>	<ol style="list-style-type: none"> <li>4. Create IM/IT professional development tracks within the Ministry.</li> <li>5. Work with labor market partners.</li> <li>6. Implement in-house and/or out-sourced training programs.</li> <li>7. Assess staff performance and provide feedback.</li> <li>8. Develop action plan for NICHP.</li> <li>9. Develop individual training plans.</li> <li>10. Create monitoring mechanism to assess compensation levels.</li> </ol>	<ol style="list-style-type: none"> <li>11. Implement individual training plans.</li> <li>12. Provide staff with performance objectives.</li> <li>13. Assess and plan for training requirements.</li> <li>14. Provide training as needed.</li> <li>15. Assess performance of staff.</li> <li>16. Monitor compensation levels.</li> </ol>

## 4.3 Resources

This section of the plan presents an estimate of the staff and cost to execute the proposed work plan. The resources are shown both in aggregate form and as incremental resource build-up.

### 4.3.1 Unified Budget

Table 15 presents the projected resource requirements to support the two-year goals and objectives. The detailed increments that form this budget are detailed in the next section of this report. The process used to obtain this estimate was to breakdown the required gap in “As-Is” requirements that would require fulfilling to achieve the two-year objectives. To complete this cost estimate, assumptions were made as to the number of staff required, typical compensation, and impact on ODC.

**Table 15. Unified Budget**

Department	As-Is	Staff Incr	To-Be	Cost Month (L.E.)	Avg Cost	Distribution Dept. Avg. Cost to NICHP Avg. Cost	Avg ODC Yearly (L.E.)	Cost L.E./Year
Administration	13	2	<b>15</b>	19,095	1,273	66.4%		229,140
NICHP Training and Development	5	4	<b>9</b>	16,235	1,804	94.1%		194,820
Information Resource Center	5	2	<b>7</b>	5,000	714	37.3%		60,000
Health Information Services Department	35		<b>35</b>	18,700	534	27.9%		224,400
System Design Development	11		<b>11</b>	88,900	8,082	421.7%		1,066,800
	<i>PBS</i>	3	<b>3</b>	7,400	2,467	128.7%		
	<i>HIS</i>	0	<b>6</b>	17,000	2,833	147.8%		
	<i>HBS</i>	4	<b>12.75</b>	35,425	2,778	145.0%		
	<i>Website Development</i>	2	<b>7</b>	11,000	1,571	82.0%		
	<i>EIS</i>	2	<b>6.25</b>	18,075	2,892	150.9%		
Health Directorate Support Unit	5	11	<b>16</b>	14,300	894	46.6%		171,600
Technical Network Support	7	5	<b>12</b>	17,200	1,433	74.8%		206,400
	<b>92</b>	<b>48</b>	<b>140</b>	<b>268,330</b>	1,917	100.0%	<b>813,601</b>	<b>2,966,761</b>

As shown in the table, it is estimated that the staffing level of the NICHP must increase 52.2 percent, which will drive costs to increase by 77.2 percent, to L.E. 2,966,761, to achieve the goals and objectives stated in this plan.

Table 16 presents the estimate of ODC required to support the plan. It is estimated that ODC would need to increase 38.4 percent to support the activities of the plan.

**Table 16. Other Direct Costs**

ODC (L.E.)		Growth Factor
Supplies	157,171	152%
Maintenance & Administration	44,000	110%
Transportation	54,783	152%
Per Diem & Lodging	293,625	125%
Training Allowances	106,522	152%
Training Services	157,500	152%
<b>Average Cost per Month</b>	<b>813,601</b>	<b>138%</b>

### 4.3.2 Incremental Resource Build-Up by Initiative

This section of the plan presents the incremental build-up of labor resources that were used to estimate the total resource cost in the To-Be business model. These incremental resources were identified as necessary to execute the initiatives within the strategic plan.

**Table 17. Special Projects To Improve Data Interoperability**

1.0	Special Projects		HIS 2000		NHIS/EIS Team		HBS Team	
	L.E. Month	Incremental Positions						
	4500	Senior Team Coordinator	1	4500	1	4500	1	4500
	4000	Senior Programmer	2	8000	2	8000	3	12000
	1500	Junior Programmer	2	3000	1	1500	4	6000
	1500	Graphic Designer	0.5	750	0.25	375	0.25	375
	1500	Documentation Writer	0.5	750	0	0	0.5	750
			<b>6</b>	<b>17,000</b>	<b>4.25</b>	<b>14,375</b>	<b>8.75</b>	<b>23,625</b>

**Table 18. Center ff Excellence to Support IM/IT with Ministry**

<b>2.0</b>		<b>Mounira Training Center</b>			
	Add Center of Excellence	Coordinator	1	3,850.00	3850
		Coord Assist	1	3,850.00	3850
		Messenger	1	400	400
		Cleaning Person	1	400	400
			<b>4</b>		<b>8,500</b>
		<b>WebSite</b>			
		COE position	2	1500	3000
					0
					0
					0
			<b>2</b>		<b>3,000</b>

**Table 19. Hire Two Deputy Managers to Supplement Technical Management**

<b>3.0</b>	<b>NICHP Admin</b>			
	Deputy	<b>2</b>	2000	<b>4000</b>

**Table 20. Structure Website Management to Achieve Benefits of MOHP Website**

<b>4.0</b>	<b>Website Management</b>			
	Coordinator	1	2000	2000
	Editorial/Content	2	1500	3000
		<b>3</b>		<b>5000</b>

**Table 21. Supplement Technical Services Resrouces**

<b>5.0</b>	<b>Information Tech Services</b>			
	Technician	3	300	900
	Senior Technician	1	1000	1000
		<b>4</b>		<b>1900</b>

**Table 22. Supplement Network Services Resources**

<b>6.0</b>	<b>Network Administration</b>			
	Junior Technician	1	1500	<b>1500</b>

**Table 23. Structure Information Resource Center Management to Achieve Benefits of Data Interoperability and Publication Opportunities**

<b>7.0</b>	<b>Resource Center</b>			
	Senior Coordinator	1	1500	1500
	Publication Specialist	1	1500	1500
		<b>2</b>		<b>3000</b>

**Table 24. Continue to Implement Governorate Health Directorate Support to Improve Data Flows**

<b>8.0</b>	<b>Health Directorate Support Unit</b>			
	Regional Coordinator	8	500	4000
	Data Analysis	3	1000	3000
		<b>11</b>		<b>7000</b>

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# Annex: NICHP Staff Matrix

Org.	Name	Position	Qualification	Date of OCC.	Date in Center	Room #
HMHC	Hala Mostaffa Safot	HDSU Director	Ph.D. Medical School	19/9/91	1/1/1999	009
HMHC	Hosam Eldeen Maher	Data Analysis Assistants	Commerce - Cairo University	1/7/1991	1/1/1999	009
HMHC	Mohamed Abbas Ibrahim	Data Analysis Assistants	Science - Ain Shams	1/1/1997	1/1/1999	009
ITI	Hanan Abou El-Dahab	Cancer Registry Technician	Biomedical Engineering - Cairo University	1/1/1999	1/1/1999	007
ITI	Samah El-Zawahry	Cancer Registry Technician	Business Administration - Minor Computer Science - Alex. Academy	1/1/1999	1/1/1999	007
ITI	Hebattallh Mohamed Shaheen	Database Programmer	Communication - Banha University	1/1/1999	1/1/1999	010
ITI	Mona Mahmoud Ali	Database Programmer	Power Engineering- Cairo University	1/1/1999	1/1/1999	010
ITI	Rania Ahmed Sami	Network Tech. Support	Engineering and Computer Science- Monofia University	6/1/1999	6/1/1999	105
ITI	Ibtessam Abdel Fadel	Web. Developer	Computer Science Eng. - Ain Shams University	1/1/1999	1/1/1999	306
ITI	Mona El-Gharabawy	Web. Developer	Electronic Engineering - Monofia University	1/1/1999	1/1/1999	306
ITI	Khaled Farook	Database Programmer	Chemistry - Cairo University - Computer Science ITI	1/1/1999	1/1/1999	309
ITI	Shady Ahmed Hassan	Database programmer	Computer Science	7/1/1999	7/1/1999	309
NICHP	Alia Mohamed Omer El Saedy	Officer	Commercial Secondary School	09/05/73	09/05/73	001
NICHP	Hanaa Mahmoud Zaki	Officer	Statistical and Medical Technician	21/6/89	6/9/1989	001
NICHP	Kawsar Abd El Hamid El Sayed	Officer	Secretary institute	04/11/63	07/01/76	001
NICHP	Mona Mohamed Abd El Rehem	Officer	Commercial Secondary School	19/9/89	19/09/89	001
NICHP	Soad Adly Eskander	Officer	Statistical and Medical Technician	1/12/1984	28/1/85	001
NICHP	Mohamed Abd El Megeed Maghraby	Administration Development	Bach. of High Institute	08/07/71	01/08/90	003
NICHP	Hanan Gamal El-Din	Lib. Assistant	Statistical and Medical Technician	10/6/1990	23/6/90	004
NICHP	Mahmoud Ahmed Hosen Abo Baker	Lib. Assistant	Commercial Secondary School	1/3/1996	1/3/1996	004
NICHP	Samia Eshak Bortrous	Lib. Assistant	Bach. of High Institute 94	03/04/81	03/04/95	004
NICHP	Ragaa Ahmed Anbar	Directorate of Publishing Unit	Bachelor of Literature 67 Diploma 80in information	16/04/1968	25/07/1989	005
NICHP	Sana Ibrahim Ali Saleh	Manager of Department	Bachelor of Dental 72 Diploma in Statistics 79 Diploma Computer 90	15/10/1972	1/8/95	005
NICHP	Eman Ibrahim Nasr Ali	Statistical Technician	Health Technical Institute	29/05/94	23/06/94	006
NICHP	Naglaa Hussein Fahmy Hassan	Statistical Technician	Health Technical Institute	16/01/95	23/01/95	006

Org.	Name	Position	Qualification	Date of OCC.	Date in Center	Room #
NICHP	Seham Taha Osman	Statistical Technician	Health Technical Institute	13/11/93	29/01/94	006
NICHP	Amani Sami Gaber	HIS support and data analyst	Medical School	9/9/1999	9/9/1999	007
NICHP	Rania Hamada	HIS support and data analyst	Medical School	8/6/1999	8/6/1999	007
NICHP	Hosam Eldeen Saad	Statistical Technician	Statistical and Medical Technician	11/11/1992	6/6/1993	008
NICHP	Tamer Ismail Eaid	Statistical Technician	Health Technical Institute	20/2/97	19/7/97	008
NICHP	Azza Mohamed Ibrahim Ghazawy	System Analysis & design	Bach. in Science 82	30/06/89	09/10/89	010
NICHP	Ebtsam Mostafa Ali	System Analysis & design	Bach. of Commerce	25/10/82	30/10/85	010
NICHP	Traza Fahmy Kedees	System Analysis & design	Bach. in Science 78 Diploma in Computer 84	04/09/81	03/10/81	010
NICHP	Ahmed Twfeek Ahmed Mahmoud	Technical Support	Health Technical Institute	11/11/1992	14/6/93	102
NICHP	Maikl Abdel Noor	Technical Support	Statistical and Medical Technician	11/11/1992	12/6/1993	102
NICHP	Mohamed Ahmed Mostafa El Gohary	Technical Support	Health Technical Institute	06/06/88	15/06/88	102
NICHP	Osama Fouad	Technical Support	Health Technical Institute	1/12/1993	1/12/1993	102
NICHP	Aber Abd El Azem Abd El Fatah	Statistical Technician	Health Technical Institute	16/05/70	31/01/91	106
NICHP	Azeza Hosen Soltan	Administration Development	Bach. of High Institute 89	05/11/76	08/08/89	106
NICHP	Fahema Saad El Dein Mohamed	Statistical Technician	Health Technical Institute	28/09/80	30/09/80	106
NICHP	Fatma Abd Alla Mohamed Rashad	Statistical Technician	Health Technical Institute	28/10/85	31/10/85	106
NICHP	Samia Abdel Monim	Statistical Technician	Statistical and Medical Technician			106
NICHP	Samia Seef Morkos	Statistical Technician	Health Technical Institute	06/02/86	17/02/86	106
NICHP	Thoria Ahmed Taha Fouda	Officer	Commercial Secondary School	13/08/81	06/09/81	106
NICHP	Afaf Mohamed Mahmoud El Barbary	Statistical Technician	Health Technical Institute	16/01/95	23/01/95	107
NICHP	Aida Abd El Fatah Basuony	Statistical Technician	Health Technical Institute	29/12/88	13/02/89	107
NICHP	Amal Yousif Mahmoud	Statistical Technician	Statistical and Medical Technician			107
NICHP	Azza Taha Sayed Ali	Statistical Technician	Health Technical Institute	26/09/83	01/10/83	107
NICHP	Kareman Zakaria Nakhla	Statistical Technician	Statistical and Medical Technician			107
NICHP	Mohamed Esam Shaban Hamza	Statistical Technician	Health Technical Institute	15/11/76	18/11/76	107
NICHP	Samia Saed Zeed Farag	Statistical Technician	Health Technical Institute	03/12/67	02/07/89	107
NICHP	Sawsan Mohamed	Statistical Technician	Statistical and Medical Technician			107

Org.	Name	Position	Qualification	Date of OCC.	Date in Center	Room #
NICHP	Azza Ali Abdo Mohamed	Officer	Commercial Secondary School	22/06/87	14/07/87	108
NICHP	Hosnia Sayed Hosen Abo El Alla	Officer	Commercial Technician	11/08/74	18/08/74	108
NICHP	Rabha Abo Serea Ead	Officer	Commercial Secondary School	13/08/81	12/09/81	108
NICHP	Sayada Ahmed Hassan Ahmed	Statistical Technician	Health Technical Institute	13/04/87	22/04/87	108
NICHP	Aber Abd El Azem Mahmoud	Statistical Technician	Health Technical Institute	11/11/93	16/06/93	109
NICHP	Berses Eed Meseha	Statistical Technician	Health Technical Institute	11/01/92	17/02/92	109
NICHP	Mona Rasmy Masoud Abo Seef	Statistical Technician	Health Technical Institute	29/12/88	01/12/89	109
NICHP	Nadia Fouad Fawzy	Statistical Technician	Health Technical Institute	11/01/92	18/02/92	109
NICHP	Sameh Balamon Reiad	Statistical Technician	Health Technical Institute	29/12/88	15/01/89	109
NICHP	Sanaa Abd Hakim	Statistical Technician	Statistical and Medical Technician			109
NICHP	Wagih Naros Shehata	Administration Development	Bach. of High Institute 87	08/11/75	29/07/87	109
NICHP	Sohier Saad Botrous	Manager of Department	Bach. in Science of Statistics 75 Diploma in Statistics 80 Master in Statistics 83 Philosophy Doctorate in statistics.92 Diploma in Computer 86	01/11/77	04/02/84	110
NICHP	Tayseer El-Sawy	NICHP Manager				302
NICHP	Hamida Badri Adam Mahmoud	Statistical Technician	Health Technical Institute	29/12/88	18/01/89	303
NICHP	Laila Mohamed El Sawy	Officer	Commercial Secondary School	27/08/80	15/10/80	303
NICHP	Naira Ahmed El Said	Statistical Technician	Health Technical Institute	11/11/92	12/06/93	DOP
NICHP	Mohamed Nageb Abd El Hamed	Statistical Technician	Health Technical Institute	18/11/74	18/11/74	MTC
NICHP	Nahla Farok Ramadan	Officer	Commercial Secondary School	27/05/85	02/06/85	MTC
PHR	Nefesa Hassan Ahmed	Project Assistant + LAN Admin	Political Science (Cairo University) - NT courses	1/4/1998	1/4/1998	105
PHR	Les Fishbein	Health Information System Advisor				301
PHR	Mayada Mourad	Project Assistant	Bach. of Commerce	1/12/1997	15/10/99	305
URC	Ismail Torky	Network Admin	Engineering -Mataria University	11/11/1999	11/11/1999	104
URC	Khaled Mohamed Fahmy	Network Tech. Support	Engineering and Computer Science- Monofia University	31/10/99	31/10/99	105
URC	Shaymaa Hassan Abdel El Naby	Network Tech. Support	Engineering - Ain Shams University	18/10/99	18/10/99	105

<b>Org.</b>	<b>Name</b>	<b>Position</b>	<b>Qualification</b>	<b>Date of OCC.</b>	<b>Date in Center</b>	<b>Room #</b>
<b>URC</b>	Mohamed Osman	Accountant	Accounting - Cairo University	26/6/99	26/5/99	<b>305</b>
<b>URC</b>	Amir Kamal Mahmoud	System Develop. Consultant	Electronic Engineering	1/1/1994	15/5/98	<b>309</b>
<b>URC</b>	Ihab Mostafa	MIS Consultant	University of Commerce	1/12/1997	1/2/1995	<b>309</b>
<b>URC</b>	Emad A. Halim El-Shahawi	MIS Consultant	Civil Engineering- Computer Science Diploma- NT and C programming Courses	1/1/1994	15/5/98	<b>310</b>
<b>URC</b>	Ihab Mohamed El-mahdi	System Develop. Consultant	Electronic Engineering	1/1/1994	15/5/98	<b>310</b>
<b>URC</b>	Hager Fathy	Programmer	Commerce School - Ain Shams University	1/12/1997	1/2/1995	<b>DOP</b>
<b>URC</b>	Khaled Sharawy	System Manager	Agriculture School	1/12/1997	1/2/1995	<b>DOP</b>
<b>URC</b>	Inas Asad Badr	Training Coordinator	Commerce School - Computer Science Diploma- NT courses	1/1/1994	15/5/98	<b>MTC</b>
<b>URC</b>	Suhair Amer	Training Assistant	Bachelor of Computer Science 98	5/1/1999	5/1/1999	<b>MTC</b>
<b>URC</b>	Abd El-Naby Arafa	Admin. Assistant	Statistical and Medical Technician	27/12/98	27/12/98	<b>third floor</b>