

**Workshop on Using Cost-Effectiveness Analysis to Identify a Package of
Priority Health Interventions
Port Said
Egypt
January 8-13, 1995
Ministry of Health
Harvard School of Public Health
U.S.A.I.D**

**Data for Decision Making Project
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Executive Summary

Nearly fifty people participated in the second Cost-effectiveness Workshop held at the Helnan Hotel in Port Said on January 8 -13, 1995. In this six-day workshop organized by the Directorate of Planning of the Ministry of Health and the Data for Decision Making Project, teams from the governorates of Beni Suef, Alexandria, and Suez presented preliminary data from costing studies at a dozen health facilities and four hospitals. Epidemiologists from Suez Canal University, Ain Shams, and Cairo University presented reviews of the effectiveness of more than six interventions in Egypt. The DDM team of Julia Walsh, Nanda Kumar, Hassan Salah reviewed methods for costing hospitals and estimating the effectiveness of interventions, consultant Logan Brenzel from Johns Hopkins University reviewed methodologies for costing facilities and using this information for improving management and efficiency. The time frame and next steps were discussed by all the attendees. Copies of overheads used for each presentation are appended.

Summary of topics covered during the workshop:

Day 1, Sunday 8 January, 1995

- What is Cost-Effectiveness Analysis.
- Costing of Amer and Gabalayat RHUs.
- Costing of Arbeen UHC.
- Costing of Suez Quarantine.
- Costing of Tazment, Kay, El Mamalek, Sedment and Ahnasia MCH.
- Costing of Bani Suef Rural Health Center.

Day 2, Monday, January 9, 1995

- Discussion of participants' questions about costing of health facilities.
- Costing of Suez General Hospital.
- Costing of Bani Suef General Hospital
- Costing of El Gomhuria General Hospital.
- Costing of Koom El Shokafa Chest Hospital.
- Costing of Neonatal Intervention.

Day 3, Tuesday, January 10, 1995

- Costing of Diarrhea Intervention.
- Costing of Equipment.
- Costing of Hospitals.

Day 4, Wednesday, January 11, 1995

- Hospitals Services statistics.
- Costing of Activities to Promote Clean and Potable Water.
- Costing of National Programs, Use of Cost Analysis for Management.
- Effectiveness Study on Schistosoma in Egypt.
- Effectiveness Study on Diarrhea in Children.
- Effectiveness Study in Program Against Tobacco Abuse.

Day 5, Thursday, January 12, 1995

- Effectiveness Study on Poliomyelitis.
- Effectiveness Study on Neonatal Tetanus.
- Hypertension Treatment Pattern.
- Effectiveness Study for Cervical, Uterine and Breast Cancer.
- Effectiveness of Interventions.

Day 6, Friday, January 13, 1995

- Discussion of next steps.

The participants were asked to complete an evaluation form at the end of the workshop to rate the quality of the program. The questionnaire was designed to collect feedback for the speakers and organizers of the workshop as well as for the funding agency.

Generally, the participants agreed that the workshop was excellent and 89.3% felt that it would help them greatly in their current work.

Following the initial Cost-effectiveness workshop in July, 1994, the Directorate of Planning requested an expansion of the study to include three governorates Beni Suef, Alexandria, and Suez. During this January workshop USAID requested a further expansion of the study to include 3 more governorates to cover the four regions of Egypt. The three new governorates are Gharbia to represent Lower Egypt, Aswan to represent Upper Egypt and New Valley to represent Frontier Governorates. The director of Health Services of Port Said requested participation of Port Said for a total of seven governorates.

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Introduction

The Data for Decision Making Project (DDM) is a collaborative effort of the Ministry of Health (MOH), Harvard School of Public Health and USAID to strengthen the planning capacity of the Directorate of Planning (DOP) in the Ministry of Health.

Background

The Directorate of Planning began this exercise in the analysis of cost-effectiveness of interventions in early 1994 in collaboration with the Data for Decision Making Project and faculty from the Suez Canal University led by Dr. Youssef Waheeb. In July 1994, The DOP organized a workshop to introduce the methods of cost-effectiveness analysis to the governorates. Following this workshop, with the concurrence of USAID, teams in the governorates of Beni Suef, Suez and Alexandria were organized to begin the costing studies of facilities in each of these governorates. Since then, these teams have collected data on costs in several of the health facilities in Suez, Beni Suef and Alexandria and begun cost studies in the General Hospital and Fever Hospitals in each of these governorates. Dr. Julia Walsh, the DDM Director of Research, Dr. Nandakumar, the DDM Long Term Advisor, Dr. Hassan Salah, DDM Research Associate in Cost-effectiveness Analysis, Dr. Youssef Waheeb and the team at the Directorate of Planning have provided technical expertise and backup for the governorate teams.

Simultaneously with this effort to cost clinical services in the governorates, the DOP has worked with trainees from the Field Epidemiology Training Program and hired consultants from Cairo University and Ain Shams University in Cairo to review individual interventions and the morbidity and mortality each prevents. Studies of the cost of national programs such as water supplies have begun in collaboration with local consultants. Finally, a study of the utilization of health services by hypertensive patients was undertaken in 3 facilities.

Goal

The overall goal of the Data for Decision Making Project in Egypt is to strengthen capacity for using data in health planning in Egypt. The Directorate of Planning, with DDM, developed the following specific activities for health planning:

- Priority setting, using cost-effectiveness analysis of selected health interventions. This workshop is part of this activity.

- Development and implementation of a computerized Budget Tracking System for the DOP/MOH to better monitor the allocation of health expenditures, especially at the governorate level. Considerable work has already been done in Bani Suef, Alexandria and Suez governorates.

- Estimation of National Health Accounts which includes sources of finances, flows, and uses of funds in the non-governmental, public, and private sectors.

- Understanding the role of different interest groups in the health sector reform process through Mapping of the Decision Making Process. This exercise has been done on the School Health Insurance Program at Health Insurance Organization (HIO). DDM plans to continue this activity in 1994 by mapping drug policy.

- Strengthening data on public and private health care provision and financing through household and provider surveys. This information will show health care utilization and expenditures at the household level, and patterns of service provision in Egypt.

- Strengthening the human resource capacity of the DOP and MOH staff in the project governorates through short and long-term training in health planning, economics, policy and management.

Cost-effectiveness analysis

Resources for the delivery of health services are limited, therefore the Egyptian government needs to make choices as to which health services should be financed. Resource allocation decisions mean making tradeoffs between funding one type of health program or another. For example, choosing to construct a hospital may take funding, personnel, and materials away from other health services. In order to evaluate which tradeoffs are "worth" the cost, health planners can use Cost-Effectiveness Analysis (CEA). In measuring health effects in common units across interventions, decision makers can compare cost-effectiveness ratios. In CEA, the economic cost of a health intervention is divided by an estimate of the health effects; the interventions with the smallest ratios are considered to be the most cost-effective. With this approach, health interventions can be ranked according to their cost-effectiveness ratios, and the most cost-effective programs selected as health priorities for funding by governments. Health

effects can be measured by a number of methods that combine both deaths averted and disease averted by the interventions, these include: Healthy Years of Life Lost, Quality Adjusted Life Years, or Disability Adjusted Life Years.

Role of cost-effectiveness analysis in resource allocation for health

- CEA is a tool for identifying which health interventions achieve the greatest level of impact per unit of investment, and the results can be used to evaluate on-going health interventions or to plan for future health programs. In addition, CEA can assist program managers to identify ways to improve efficiency and effectiveness of service delivery.

- While the use of CEA for program management is important, the primary emphasis of the methodology is on planning and evaluating interventions so that resources can be allocated in a more cost-effective manner at a national or regional level.

- Cost-effectiveness analysis can assist in the evaluation of alternative delivery strategies.

- CEA can also inform decision makers about choices for new interventions.

- Finally, CEA can assist in identifying benefit packages of priority health interventions.

Day 1: Sunday 8 January, 1995

Official Opening

Dr. Afaf Osman, Coordinator of DDM Project at DOP, welcomed workshop participants and introduced **Dr. Moushira El Shafei**, Undersecretary of Family Planning and Director of Department of Planning. Dr. Moushira welcomed the participants on behalf of DOP gave a brief summary of DDM activities. She made the following points:

- Cost-Effectiveness Analysis is important for health planning because having a rich source of data that can be analyzed will help health planners identify a package of priority health interventions.

- MOH is in the process of identifying maximum benefits by using Cost-Effectiveness Analysis for future planning.

- Having well-trained personnel and reliable data is the base of planning in the MOH.

- She encouraged the different governorates to start their exercises to define the real burden of disease on the local level.

- The next health plan for MOH will be a plan based upon target objectives and not an investment plan.

Dr. Sameh El Gayar, Acting Project Officer of Cost Recovery Project, welcomed the participants on behalf of the USAID. Dr Sameh stressed on the importance of data for management to help in the decision making process and the importance of the workshop to evaluate the data and plan the next steps.

Dr. Julia Walsh, Director of Research, Data for Decision Making, Harvard School of Public Health, **What is Cost-Effectiveness Analysis.**

In her session Dr. Julia discussed the following points:

- Policy process.
- Domains for policy decisions.
- Steps for CE Study.
- Disease burden.

Question: Why is it very high, 29.7 X 1000,000 DALY's for total disease burden for women age 15 - 44 years?

Answer: It is a global study.

- Role and limitations of CEA.
- Practical applications of CEA.

Dr. Mohamed Nageeb, Director of Amer Rural Health Unit, Costing of Amer and Gabalayat RHUs.

Dr. Mohamed presented data collected for costing of Amer and Gabalayat RHUs and the methodology of collecting the data for each of them.

Question: The land market value is more than the total annual cost of the health facility, and even in Gabalayat it is more than double the total cost, so I suggest removing the land market value from the total cost of health facilities?

There was a discussion about this issue and finally a decision was taken to include the cost of the land in separate analysis.

Dr. Magda Ahmed, Director of Arbeen Urban Health Center, Costing of Arbeen UHC.

Dr. Magda compared the cost for RHU and UHC in Suez, and brought up the following points that affected the total cost of the health facility:

Question: Arbeen UHC made some renovations that cost about 120,000 L.E., but did not include in the cost because it was done in 1991 and not at the time of the study (1994), should the renovation costs be included?

Answer: The replacement cost of the building will include the cost of renovation that had been done in the last years.

Question: One of the problems faced here during collection of data, is to get the salaries and benefits for doctors who are working in the UHC while taking their salaries from other health centers, and she asked, are we going to add these salaries to the total salaries, in spite of the fact that these doctors are taking their salaries from other centers and not from Arbeen HC?

Answer: Yes we have to add these salaries to the total cost, because these doctors gave their activities to Arbeen HC.

- Only 50% of the building is used as clinics while the rest of it is used in administrative aspect, so this increases the total cost per visit.

- Number of vaccinated patients (9,589) is not included in the total number of patients (55,209).

Dr. Hussein Edries, Director of Suez Quarantine, Costing of Suez Quarantine.

Dr. Hussein presented data collected for Suez Quarantine. He brought up the following points during his session:

- One of the problems faced during the data collection is estimating the cost of equipment and furniture, because quarantine is different in its activities from other health facilities, and to do

costing we had to hire someone working in this field.

- Total cost of equipment and furniture is very high (more than 3 million), because the Quarantines are expensive, particularly in Suez Canal.

Question: What kind of patients use the Suez Quarantine?

Answer: All passengers (624,501), ships (8,705) and their crew (180,000) in 1993-94 who passed through Suez must have health certificates to clarify their health status.

Question: What are the major diseases for Quarantine?

Answer: Cholera, yellow fever, meningitis.

Dr. Mohamed Serry, Director of Ahnasia Health Facilities, Costing of Tazment, Kay, El Mamalek, Sedment and Ahnasia MCH health facilities.

Dr. Mohamed presented costing of Ahnasia health facilities and the difference of cost for each of them. He presented the following:

- The total annual number of patients in some facilities is low, e.g. Sedment sees 877 patients per year, as a result of a shortage of doctors who work only 50% of their time in each of health facility. Dr. Serry mentioned that for twenty health facilities there are only nine doctors.

- One of the major problems during data collection is to retrieve the patient tickets for specific days for last year, and to get the total number of patients by diagnosis. He suggested conducting the study on prospective cases.

- The building operation for Sedment Rural Health Unit is not equivalent to the true cost, because the building was military property for quite a while and after that the MOH bought it. Consequently, the MOH pays the same amount of money for water, though the consumption is much less.

Similarly, the Ahnasia MCH pays nothing towards its running costs because it is owned by Ahnasia District Hospital.

- When comparing the different costs of the health facilities, it is clear that the salaries make up the highest percentage, more than 50% of the total cost.

- Dr. Mohamed mentioned the equipment that is out of use in his report, so as not to add its cost.

Dr. Mohamed Eid, Director of Planning in Bani- Suef Health Directorate, Costing of Bani-Suef Rural Health Center.

Dr. Mohamed presented the methodology costing of Bani-Suef RHC and the source of data.

Day 2: Monday, 9 January, 1995

The first session started by wrapping up the previous discussions, Dr. Julia Walsh and Logan Brenzel answered the following questions:

Question: How can I calculate the cost of working hours for doctors who are working 50% of their time and having training in the other half?

Answer: Cost of training will be added to the training cost, while his/her salary will be added to the personnel cost with notice that the working time is only 50%.

Question: What is difference between economic and financial costs?

Answer: Economic cost is the payment required to keep that input in its present employment, while financial costs refer to actual expenditures or outlays made for specific health intervention.

Julia made a comment about high cost per visit for Sediment RHU (80 L.E.) while in Arbeen UHC it is (4 L.E.). The reason for this variation is the annual number of visits.

The following are some of Logan's comments that answered the participants questions from the previous day's session:

- Renovations must be annualized.
- For personnel cost = Monthly gross salary * Number of monthly worked * % of time for intervention.
- All personnel benefits have to be included in the total annual income.
- Training of personnel must be separated from personnel cost.
- We have to put in the unit of analysis, (per visit, per lab test,...)
- Fuel must be included, under running cost.

Logan suggested that it is essential to get guidelines in full details for costing of health facilities, so that all participants for costing can follow.

Dr. Khaled Mansour, Data analyst, Costing of Suez General Hospital.

Dr. Khaled presented the process of costing of hospital. The following is summary of his presentation:

- To cost the hospital, it was important to break down the hospital into departments, and cost each department separately.
- He discussed costing unit for each sector of the hospital, cost of visit for outpatient clinic and cost per test for the lab.

Question: How do you evaluate the cost for operating the department?

Answer: Cost for operation is estimated on basis of cost per operating hour, unless there is an extra cost of using special equipment for specific operations.

- Training cost includes all training for the last five years, and is estimated on five-year basis because it is the useful life of knowledge and skill gained from training.

Dr. Khaled summarized obstacles faced during collection of data:

- There are no hospital maps, so it was very difficult to get % of space for each department.

- Total personnel annual income is not available.

- No data exists about current functional status for equipment.

- There is a deficiency in the registration system.

- There is no standard case management and this leads to different activities for the same intervention.

Mr. Abd El Raof Sadek, Department of Statistics, Bani-Suef Health Directorate, Costing of Bani-Suef General Hospital.

Mr. Abd El Raof presented data collected for costing of Bani-Suef GH. During his presentation, he pointed out the following issues as difficulties during data collection:

He mentioned the inaccuracy of data collected that errors may reach 3-10% of the collected data. This resulted from absence of hospital information systems.

- Retrospective data usually is very difficult to retrieve from the files.

- Time frame for costing of hospitals was short.

Question: Does the equipment operation and maintenance include cost of contract for maintenance of equipment?

Answer: Usually equipment does not have contract for maintenance, unless it is under warranty.

Question: What if a piece of equipment was not functioning at the time of costing the equipment, are you going to add its cost?

Answer: I will add its cost if fixed during the year of costing the hospital, otherwise I will not add its cost because it is not functioning equipment.

Dr. Moushira stressed the importance of contracts for maintaining for the all equipment in the hospital, as maintenance is one of the major problems facing the health facilities.

Dr. Hala Safwat, Director of Statistics Department, Alexandria Health Directorate, Costing of El Gomhuria General Hospital.

Dr. Hala discussed the problems she faced during collection of data for Gomhuria GH. The following is a summary of her presentation:

- For the equipment, we first depended on the registration book for equipment but then found that:

- Donations are not usually registered.
- Equipment was registered after being used for some time.

So the team decided to visit each department to know exactly what equipment they have.

- It is always a problem to know the type of old equipment, however it is important for costing them.

Question: Some expensive equipment (e.g., for ophthalmology) had been ordered for some doctors, then the doctors left the hospital, and it is not used anymore. So the question is, should we add its cost?

Answer: Yes, As long as it is functioning.

- We had to measure each department manually because there is no map for the hospital, and I do not think it is 100% accurate.

- Log book No. 118 has the list of all equipment in the hospital without the distribution per department, but we found other log books that showed the distribution of the equipment for each department.

- We had to check each piece of equipment to see if it was functioning or not, because that was not mentioned in the log book. The difficulty was comparing the trade names of equipment in log the book 118 to those in the department. Most of the time, we needed assistance from doctors or nurses, who could identify the equipment.

- The hospital has over 600 personnel, and there are more than 8 different types of benefits for each person. The problem is that there is no book with all benefits, but there are more than 8 different books, each for different type of benefit, so to get the total cost for each person we needed to go through each book for each of the 600 personnel. Calculating the average was a good idea, but we found out that the variations are very big, so we could not use it as an estimation.

Dr. Serry, Bani Suef Governorate said that they have one book in which each page is designated for one person with the all benefits for him/her.

- Also one of the problems we had was, we did a major renovation of electricity network,

which cost thousands of L.E.

Question: Do we have to put this as renovation cost or just a part of the cost of the building?

Answer: It is a part of the cost of the building.

Dr. Mahdia Ali, Director of Planning, Alexandria Health Directorate, **Costing of Koom El Shokafa Chest Hospital.**

Dr. Mahdia presented results of collecting data and some statistical data for El Shokafa CH. Following is a summary for her presentation:

- Cost per discharge is 535 L.E, and this number does not include the medication (35,433 L.E per year) and land cost.

- Occupancy rate is 54%, average length of stay is 47 days, and the average of 4 patients per bed/ year.

Question: Why is it only 4 patients per year?

Answer: Because usually chest patients, T.B. for example, need a range of two months as an inpatient, while in other general hospitals like Gomhuria GH, it is 36 patients per bed /year and average length of stay is 5 days.

Question: What is the Occupancy Rate?

Answer: It is the total inpatient days divided by the number hospital beds times 365 days.

Dr. Logan followed the discussion with a brief presentation about costing a T.B. inpatient, and how it is different from an outpatient case.

Dr. Ibrahim Afefi, Director of Suez General Hospital, **Costing of Neonatal intervention.**

Dr. Ibrahim discussed the methodology of collecting data in a neonatal unit, Suez GH. Following are the main points of his presentation:

- Total cost for the neonatal including the medication is 502 L.E.

Question: How did you calculate medication cost (92 L.E per patient)?

Answer: By asking the specialists working there about the line of treatment, I compared this with what actually was prescribed to the patients. There is a list of the pharmaceutical drugs in the folder which include 13 types of medications.

Question: Why is the maintenance so high (2200 L.E.), while it is zero in some other places?

Answer: Because there are contracts for maintenance for most of the equipment.

Question: Is the land cost included in the total cost for the neonatal unit?

Answer: Yes it is included, and it is market value, it costs 300,000 L.E..

Question: What is the mortality rate?

Answer: It is very high, 25%, because the unit accepts cases from other hospitals, and usually these cases are high risk.

Day 3: Tuesday, 10 January, 1995

Dr. Mohammed Serry, Director of Ahnasia Health Facilities, Costing of Diarrhea Intervention.

Dr. Mohamed discussed the difficulties of getting cost for diarrhea patients, because of the absence of special services (personnel, examination room, lab... etc.) for diarrhea patients. He showed a map for one of the health facilities.

Then the discussion turned to the results from the spread sheet. The analysis stated the cost per diarrhea patient, but it was actually the cost for only one visit.

It was decided to put on cost per visit regardless the type of interventions.

Dr. Mohamed mentioned that the 12 days that have been selected do not represent the working activities in this hospital and that it is better for each health unit to decide on its own 12 days.

Hassan, Said that in this case the sample will not be representative, and each health facility will select the days with high patients rate.

Dr. Ramses Mena, Former Undersecretary for medical Supplies, Costing of Equipment.

Dr. Ramses discussed the data he received from each team from different governorate, with following comments:

- Log book 118 is not a reliable method to get the full name of equipment.

Question: What if we get the name of the equipment for each health facility through MOH?

Answer: It use to be possible to get such data from MOH, but now it is either on the governorate level or the health facilities level.

Question: Does the cost of the equipment include the transportation and insurance costs?

Answer: No it does not.

- It is very important to get the following items to facilitate costing of equipment:

- Full name of the equipment.
- Model.
- Serial number.
- Country of manufacturer.

- In case these items are not available, then we must provide more description, e.g. its power, diameter.

Question: How can I add the cost of maintenance to the total cost, and at the same time add its replacement cost for a new one which will not need any maintenance?

Answer: Replacement cost is annualized over the life of the equipment. Since we are assessing many facilities, the annual maintenance cost of the equipment will be an average for those facilities.

Dr. Julia Walsh, Director of Research, DDM, **Costing of Hospitals**.

Dr. Walsh discussed the step down methodology for costing of the hospital. The presentation was followed by Arabic translation.

All questions were on the calculation of percentage at each step, then the discussion continued after lunch about the allocation for each department contribution, e.g. maintenance, lab, laundry.... etc, to get the total cost of medicine and surgery departments.

Day 4: Wednesday, 11 January, 1995

Dr. Julia Walsh, Hospital Service Statistics.

Dr. Walsh gave a presentation about hospital statistics e.g. occupancy rate, inpatient days, average length of stay and how to calculate them. The session helped to clarify many questions about definitions for hospital statistics that arose during Dr. Madiha presentation on Monday.

The other part of the session was about the deaths averted as a result of the measles program. Dr. Julia used an example from West Africa, with 1.7 deaths averted for a program of 80% coverage, 85% effectiveness vaccine and 2.5% case fatality rate.

Dr. Mohamed Abd El Ghafar, MOH, Dr. Madiha Saied, Cairo University, Costing of National Programs.

Dr. Ghafar presented data collected for costing of activities to promote clean and potable water.

There were questions about sources of data, either from the field or from research.

Cost of a cubic meter of clean water is 40 piasters, the cost per individual/year is 36.5 L.E., with average consumption of 250 liters per day.

Dr. Ghafar mentioned that the data collected is not complete yet, he just presented what he got from the last few months' activities.

Dr. Madiha discussed four variables that should be considered related to CEA for potable water supply:

- Quantity and quality of water supply.
- Water utilizer.
- Water borne diseases.
- Availability of programs for prevention and control of water borne diseases.

Question: How can you differentiate between the incidence rate for one of the disease resulting from water infection and not from food infection?

Answer: There is no way to differentiate.

Logan Brenzel, Costing of National Health Programs, Science or Art?

Dr. Logan started her session by presenting the different approaches for costing hospital activities. The presentation followed by Arabic translation. She discussed the following:

- Approaches for estimating drug utilization.

- Media or communication costs.
- Methods for allocating personnel time among activities.

The second part of the presentation was about the different approaches for costing the health impacts of water and sanitation in Egypt.

Answer: There are two options, either on global analysis or cost analysis of stations based

Dr. Logan Brenzel

Dr. Logan presented the importance of cost analysis for:

- Improving the overall effectiveness of the health service.
- Stringing on-going managerial functions.

mentioned the following approaches:

- Cost profile analysis.
- Management indicators.
- Matrix analysis.
- Total and unit cost curves.
- Analysis of sustainability.

Mona El Lawindi

Effectiveness study on Schistosomiasis in Egypt

Following are the main points of the presentation:

- The overall prevalence of
- Average age distribution of infection with *S. haematobium* reaches its peak prevalence
- Regarding the *S. mansoni* infection, the maximum prevalence is in the age group 10-
- The incidence rate estimation for *S. mansoni* was declared to be 20% based on a study

conducted in Kafer El-Sheikh Governorate in 1992 and 1993.

- The overall prevalence rate of various grades of liver fibrosis is about 30%.
- The average age of onset illness is 35 years.
- MOH has as its target to reduce the schistosomiasis rate to a level below 5% by the year 2000.

Dr. Mona pointed two main issues :

- Mortality rate for cirrhosis and fibrosis are not available because absence of national registration on the cause specific death rate.
- % of disability for schistosoma patient not available.

Dr. Maha Rabbat, Cairo University, Effectiveness study on Diarrhea in Children.

Dr. Maha presented the following figures in here presentation:

- The age group of 1 to 5 years old has a mortality rate of 1.13 per 1000 child of the same age from diarrhea, CAPMAS 1991.

Question: What about under-registration?

Answer: Yes there is under-registration, but it occurs for newborns under 15 days, because the law allows 15 days for registration of the child after delivery.

- Cause-specific child mortality rate is 2.2, CAPMAS 1989.
- The difference in morbidity rate is due to :
 - Difference in the recall period.
 - Age of child.
 - Months of survey.
 - Difference in represented community.

Dr. Rabbat also presented some primary data about maternal morbidity and mortality.

Dr. Fatma Hassan, Suez Canal University, Effectiveness study on program against tobacco abuse.

Dr Fatma mentioned the following figures in her presentations:

- Smoking prevalence is 16% for 1987.
- Cumulative mortality rate per 1000 males aged 35 - 69 is 134 for never smoked regularly, and 379 for current cigarette smokers, with a difference of 245.

Day 5: Thursday, 12 January, 1995

Abd El Nasser Ahmed Effectiveness study of Poliomyelitis (EPI intervention)

Dr. Nasser presented his report about poliomyelitis with the following points:

- Polio incidence is 3.0 per 100,000 (1992), and 0.8 per 100,000 (1993).

- Polio vaccine coverage is more than 85%, 1994.

Question: Why are there more cases of Acute Flaccid Paralysis (AFP) in some months

Answer: I do not know exactly, but it may be due to under-reporting.

Question: Is there is any data about mortality rate?

Answer: Not in my report, because of the absence of registration for the cause of death.

Dr. Sarah Azab, MOH, Study of Neonatal tetanus in Egypt.

Dr. Sarah discussed Neonatal Tetanus (NNT) in her report.

- Incidence rate of NNT in 1985 was 3.7, and in 1993 it declined to 0.8 per 1000 live births.

- 82% of the cases for NNT are males.

Question: Do you have any explanation for this variation?

Answer: There is no explanation for it.

- Case Fatality rate is 64% in 1992.

Question: Why are there more cases in winter ?

Answer: Maybe because people live in more closed in areas tin winter than in summer.

- Tetanus toxoid vaccination coverage was 8% in 1983 and it reached to 78% in 1993.

Question: The coverage rate is very high and I think it is a result of a campaign?

Answer: You may be right.

Fekria Yousef, MOH, Dr. Amr Edries, Cairo University, Hypertension Treatment Pattern.

Dr. Fekria presented data from National Hypertension Project:

- 34% of all patients with hypertension are receiving care.

- About 17% of Egyptians have high blood pressure.
- Prevalence varied from 50.2% in Cairo to 19% in New Valley.
- Rural prevalence is 28%, urban prevalence is 32%.
- Hypertension is controlled in only 8.37% of cases.

The methodology and samples for data collection of hypertension patients were presented by Dr. Amr. Participants had the following questions:

Question: Was there a criteria for selecting the sample?

Answer: No it was a random sample from three areas.

Question: Why is the cost of treatment expensive compared to other less expensive cases?

Answer: It depends on the dose, the degree of hypertension and the cost of the product, but the average cost of medications is 23.2 L.E per month.

Question: Is this sample for outpatient only?

Answer: No, it is for both in/outpatient.

Question: What is the socioeconomic standard for the samples?

Answer: The sample covered different socioeconomic levels.

Dr. Amany Refaat, Suez Canal University, Effectiveness study for cervical, uterine and breast cancer.

Dr. Amany mentioned the following points during her presentation:

- All statistics are mainly hospital-based records and not population-based .
- Mortality rates are not accurate due to problems in reporting. The available mortality rate is the 1980 cancer mortality rate of 19.5/100,000.
- Incidence rates of different cancers are not available.
- There are big differences between rates from National Cancer Institute and data from Alexandria.
- The statistics dos not consider stages of cancers or natural history of disease.

Dr. Julia Walsh, Effectiveness of an Intervention.

Dr. Julia discussed the role of efficacy, coverage, diagnostic accuracy, provider and patient compliance in effectiveness of intervention and possible health outcomes resulting from diseases. The overheads are appended.

Mr. Fakhr El Den Khaled, Governor of Port Said.

Dr. Aly introduced Mr. Fakhr, and Dr. Moushira welcomed him, and mentioned some of DDM project activities. Mr. Fakhr welcomed the workshop participants, and gave a brief speech about health care in Port Said.

Day 6: Friday, 13 January, 1995

During the session, the participants discussed the next steps. Each governorate presented their workplan for the next four months, as follows:

Dr. Mohamed Serry, Bani Suef:

- Finalize the costing of health facilities that were included in phase one.
- Calculate the cost of medication for each health facility.
- Include the vaccination cost.
- Estimate the tickets for HIO.

Question: What is the final situation regarding the land? Are we going to include it in the total cost?

Answer: Yes we need to know its price, and it will be included in a separate analysis.

- We will include a vertical-view drawing for each health facility to get an idea about its different components.
- The log books 118 and 121 will be the reference books for equipment, but we need more guidelines about costing of equipment.
- For calculation of total income for personnel, we will use log book 132, which includes all benefits for each personnel.
- For maintenance, log book 112 will be very helpful.
- We request the treatment pattern study to be prospective, because of the difficulty to retrieve the patients' tickets for specific diagnosis.
- In case there are changes in the forms for collecting data, we would like to have them as soon as possible.
- Personnel who are working to collect of data did not receive any salaries at the beginning of the study.
- We need a time-table for data collection, and a deadline of the last week of May for data to be presented in the July workshop.

Dr. Hala Mostafa, Alexandria:

- We finished the data collection for El Gomhuria GH, and it will be ready next month.
- The amount of work, costing the rest of health facilities, is huge compared to the time frame for the next four months.
- We do not have log book 132 or log book 121.
- We need to be provided with the spreadsheet so that we can work on the analysis by ourselves.
- We need a plan of action for the next four months.

Dr. Naseem Gabra, Suez:

- We are planning to finish data collection by the end of May.
- We will start by costing the Suez GH according to the methodology that has been presented in the workshop.

Question: Are we going to separate outpatients from inpatients?

Answer: Yes, each outpatient clinic and inpatient department should be treated separately.

Moushira, Julia, Afaf, Nandakumar, Hassan, Closing session

They thanked all participants for their attendance and for their great productivity. They stressed on the fact that we will all get the results in the next few months when most of the data will have been collected and analyzed.

Workshop Evaluation Questionnaire

The participants were asked to complete an evaluation form at the end of the workshop to rate the quality of the program. The questionnaire was designed to collect feedback for the speakers and organizers of the workshop as well as for the funding agency.

Generally, the participants agreed that the workshop was excellent and 89.3% felt that it would help them greatly in their current work.

The following are the participants' average answers to the questionnaire:

(1) Thinking about the entire workshop, how would you rate the following dimensions (use a scale of 1 through 7, with 1= Poor and 7= Superior):

- a. The workshop overall (6.1).
- b. Its usefulness to you for your job (6.0).
- c. The quality of the presentation (5.8).
- d. The quality of the class discussions (5.6).
- e. The clarity with which goals were stated (5.7).
- f. The degree to which goals were achieved (5.5).

(2) Taking into account your understanding of the workshop goals, how would you rate the following (1 = Too little, 7 = Too much):

- a. Depth to which material was covered (5.8).
- b. Amount of work required (5.7)
- c. Emphasis on quantitative skills (5.6).
- d. Opportunity for discussion in class (6.3).
- e. Opportunity for discussion outside of class (5.8).

(3) Consider the workshop materials, How would you rate the following (1 = Poor, 7 = Superior):

- a. Notes prepared by instructors (6.1).
- b. Xeroxed articles (6.3).
- c. Books (6.2).

(4) Consider the housing and other arrangements, How would you rate the following (1 = Poor, 7 = Superior):

- a. The quality of accommodations (6.4).
- b. The availability and quality of meals (6.3)
- c. The social activities (6.1).
- d. Helpfulness of staff (6.7).

Conclusion

The goals of the January 6-13, 1995 workshop are as follows: to review the results of the work to-date in costing and effectiveness; to review methodology for costing of facilities, hospitals, and national programs; and to discuss the use of these results for increasing the efficiency of management of resources in the health services.

The study presentations included:

- preliminary costing studies from outpatient facilities in Alexandria, Bani Suef and Suez.
- preliminary costing studies from the Alexandria tuberculosis hospital, from Gomhuria Hospital in Alexandria, from the Suez General Hospital, and the Bani Suef General Hospital.
- costs of the Suez quarantine system for inspection of ships going through the Suez Canal.
- effectiveness reviews for polio immunization, neonatal tetanus control program, schistosomiasis, diarrheal disease treatment with ORS, smoking, screening and treatment for the female cancers (breast, cervix, and uterus), and maternal mortality.
- reviews of utilization of drugs for hypertension in Cairo, tuberculosis inpatient treatment in Alexandria, and outpatient clinics in Bani Suef.

Findings of note from these studies: the cost per outpatient visit varied widely among facilities primarily determined by the patient utilization from 4 to 80 L.E. The patients seen at the outpatient health centers and posts were primarily young children and a few adults.

The presentations engendered much discussion on data sources, details of costing methods, and development of a process and time frame for completion of the studies. Good teams for the costing studies have developed in both Alexandria and Suez. While Beni Suef has several strong individuals, they have not coalesced as a team.

The uses of cost-effectiveness results were discussed in several sessions. Logan Brenzel presented an entire session at the end of the workshop based upon her experience of doing costing studies in 15 countries. During many of the presentations, participants asked questions and made comments regarding the use of information for management. Dr. Walsh discussed uses of hospital costing data for management during her session on hospital costing methods. The other uses discussed included: identification of benefit packages, comparing new technology with existing technology, assessing new facilities and new drugs, and developing priorities for national programs.

Expansion of the Study to other Governorates

The study now includes analysis of costs from three governorates: Bani Suef, Alexandria, and Suez. However, this does not include any governorates from some of the less developed parts of Egypt that have fewer health services and potentially different patterns of disease and death, namely the Delta and Upper Egypt. To make this study more nationally comprehensive would require including costing studies from rural governorates and from these underrepresented areas of Egypt.

During the workshop, the USAID representative Dr. Sameh El Gayar and Dr. Moushira agreed to expand the studies to at least 3 more governorates. Expanding the cost-effectiveness analysis to at least 6 governorates would ensure that the results are nationally representative and increase the number of governorates which understand how to undertake costing studies and use the results to improve the efficiency and effectiveness of resource allocation for health services.

Next steps

The next steps for completion of the cost-effectiveness exercise are:

- Completion of the costing studies at the governorate level using the guidelines and data sources discussed at the workshop for facilities and hospitals. In Bani Suef which has more than 90 outpatient facilities, a random sample of facilities will be costed. Suez and Alexandria have a small number of facilities; Suez will cost all of them and Alexandria will cost about half of them.
- Development of a manual for costing by the DOP in collaboration with representatives of the governorates. This would detail the process of costing, sample tables for data collection, sources of data (for examples for personnel and the training and benefits received), equipment lists for outpatient facilities, and analysis.
- Prospectively collecting information at all the outpatient facilities about the patients seen, diagnosis, hospital referrals, and drugs prescribed on a random sample of patients. Sampling method will be determined but may involve random days for all patients.
- Collect information from hospitals on drugs used for specific diagnoses under study: hypertension, diabetes, schistosomiasis, diarrhea, respiratory disease, and others.
- Assess the effectiveness of interventions (guidelines attached for the first 11 interventions which are scheduled for completion by the summer).
- Cost the clinical interventions based upon the average outpatient and hospital costs plus drug costs.
- Complete the costing of the national programs.

The governorate teams estimate that the collection of the health facility costing and utilization data will be completed by May, 1995 and analysis of this data will take place through June and July. The estimation of effectiveness for the initial 10-12 interventions should also be completed by May. Another workshop to present these results will take place in July 1995.

Appendix I: Timetable

Sunday, January 8

11:00 - 11:30 am	Official opening, Moushira, Afaf and Sameh welcome to workshop participants.
11:30 - 12:15	What is Cost-Effectiveness Analysis. Julia Walsh
12:15 - 12:30	Tea break
12:30 - 1:00 pm	Costing of Amer and Gabalayat RHUs. Mohamed Nageeb
1:00 - 1:30	Costing of Arbeen UHC. Magda Ahmed
1:45 - 2:15	Costing of Suez Quarantine. Mohamed Nageeb
2:15 - 3:15	Lunch
3:15 - 4:15	Costing of Tazment, Kay, El Mamalek, Sedment and Ahnasia MCH. Mohamed Serry
4:15 - 4:45	Costing of Bani Suef Rural Health Center. Mohamed Eid

Monday, January 9

9:00 - 10:15 am	Discussion of participants' questions about costing of health facilities.
10:15 - 11:00	Costing of Suez General Hospital. Khaled Mansour
11:00 - 11:15	Tea break
11:15 - 12:00	Costing of Bani Suef General Hospital. Abd El Raof Sadek

12:00 - 1:00 pm Costing of El Gomhuria General Hospital.
Hala Safwat

1:00 - 2:00 Lunch

2:00 - 2:45 Costing of Koom El Shokafa Chest Hospital.
Mahdia Ali

2:45 - 3:30 Costing of Neonatal Intervention.
Ibrahim Afefi

Tuesday, January 10

9:00 - 10:15 Costing of Diarrhea Intervention.
Mohamed Serry

10:15 - 11:00 Costing of Equipment.
Ramses Mena

11:00 - 11:15 Tea break

11:15 - 1:00 pm Costing of Hospitals.
Julia Walsh

1:00 - 2:30 Lunch

2:30 - 4:00 Costing of Hospitals.
Julia Walsh

Wednesday, January 11

9:00 - 9:30 Hospital Service statistics.
Julia Walsh

9:30 - 11:00 Costing of activities to promote clean and potable water.
Mohamed Abd El Ghafar, Madiha Said

11:00 - 11:15 Tea break

11:00 - 1:00 pm Costing of National Programs, Use of Cost Analysis for Management.
Logan Brenzel

1:00 - 1:30	Lunch
1:30 - 2:15	Effectiveness Study on Schistosoma in Egypt. Mona El Lawindi
2:15 - 3:00	Effectiveness Study on Diarrhea in Children. Maha Rabbat
3:00 - 4:00	Effectiveness Study in Program Against Tobacco Abuse. Fatma Hassan

Thursday, January 12

9:00 - 9:30	Effectiveness Study on Poliomyelitis. Abd El Nasser Ahmed
9:30 - 10:00	Effectiveness Study on Neonatal Tetanus. Sarah Azab
10:00 - 10:11	Hypertension Treatment Pattern. Fekria Yousef, Amr Edries
11:00 - 11:15	Tea break
11:15 - 12:00	Effectiveness Study for Cervical, Uterine and Breast Cancer. Amany Refaat
12:00 - 1:00 pm	Effectiveness of Intervention Julia Walsh
2:30 - 4:00	Effectiveness of Intervention. Julia Walsh
4:00 - 4:30	Fakhr El Den Khaled

Friday, January 13

9:00 - 10:45	Discussion of next steps. Three governorates
10:45 - 11:15	Closing session. Moushira, Julia, Afaf, Nandakumar, Hassan

Appendix II: List of participants

The DOP invited participants representing governorates and central MOH who are working in cost-effectiveness analysis and applying it to health planning.

- Dr. Abd El Ghafar, Mohamed

Current Position: National Programs Officer.

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- Mr. Abd El Ghani, Saed

Current Position: Data Analyst, Statistics Department, Alexandria Health Directorate.

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- Dr. Abd El Rehem, Akef

Current Position: Director of Bani-Suef Health Directorate.

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- Dr. Ahmed, Abd El Nasser

Current Position: Epidemiologist, Child Survival Project.

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- Dr. Ahmed, Magda

Current Position: Director of Arbeen UHC.

Tel (h) 321-714 Suez

-Mr. Ahmed, Salah

Current Position: Data Analyst, Statistics Department, Alexandria Health Directorate.

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- Dr. Ahmed, Samer

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- Dr. Azab, Sarah

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- Dr. Afefi, Ibrahim

Current Position: Director of Suez General Hospital.
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Tel (h) 221-217 Suez

- Dr. Ali, Mahdia

Current Position: Director of Planning, Alexandria Health Directorate.
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Tel. (h) 847-205 Alexandria

- Dr. Badawi, Ali

Current Position: Director of Port Said Health Directorate.

- Dr. Brenzel, Logan

Current Position: Health Economist.
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- Dr. Edries, Amr

Current Position: A. Lecturer, Department of Internal Medicine, Cairo University.
Tel. (h) 344-0392/344-5820 Cairo

- Dr. Edries, Hussein

Current Position: Quarantine Officer, Statistics Department, Suez Health Directorate.
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Tel. (w) 221512 Suez

- Dr. Edreis, Mohamed

Current Position: Assistant Director, Cost Recovery for Health Project.
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- Dr. Eid, Mohamed

Current Position: Director of Planning, Bani Suef Health Directorate.

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- Dr. El Gayar, Sameh

Current Position: Acting Project Officer of Cost Recovery for Health, DDM Projects.

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- Dr. El Lawindi, Mona

Current position: Lecturer, Department of Public Health, Cairo University.

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- Dr. El Masry, Badr

Current position: Director of Suez Health Directorate

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- Dr. El Shafei, Moushira

Current Position: Undersecretary of Family Planning, and Director of DOP.

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- Dr. Ezzat, Essmat

Current Position: Retired Dean, Professor of Community Medicine.

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- Dr. Gabra, Nasseem

Current Position: Planning Director, Suez Health Directorate.

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- Dr. Hassan, Fatma

Current Position: Lecturer, Department of Public Health, Suez C. University.

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- Dr. Helmy, Sarwat

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- Mr. Khaled, Fakhr El Den

Current Position: Governor of Port Said.

- Dr. Mahmud, Moatz

Current Position: Medical Consultant for Ministry of Population and Family.

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- Dr. Mansour, Khaled

Current Position: Data Analyst

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- Dr. Mena, Ramses

Current Position: Consultant for DDM, MOH.

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- Dr. Nageeb, Mohamed

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- Dr. Nandakumar, A.K.

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- Dr. Osman, Afaf

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- Dr. Refaat, Amany

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- Dr. Rabbat, Maha

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- Mr. Sadek, Abd El Raof

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- Dr. Safwat, Hala

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- Dr. Said, Madiha

Current Position: Prof., Department of Public Health, Cairo University.

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- Dr. Salah, Hassan

Current Position: Research Associate.

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- Dr. Serry, Mohamed

Current Position: Director of Ahnasia Health Facilities.

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Tel (w) 720-456/721-107 B. Suef

- Dr. Waheeb, Youssef

Current Position: Assistant Professor, Department of Public Health, Suez C. University.

Tel. (h) 242-0747 Cairo\329-075 Ismailia

- Dr. Walsh, Julia

Current Position: Director for Research, DDM.

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- Dr. Yousef, Fekria

Current position: Treatment Pattern Officer, DDM, DOP.

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Appendix III:

- **What is Cost-Effectiveness Analysis.**

- **Costing of**
Magda Ahmed

Costing of Ahnasia Health Facilities
Mohamed Serry

Costing of Suez General Hospital.
Mansour

- **Costing of Suez General Hospital.**
Raof Sadek

Costing of El Gomhuria General Hospital.
Hala Safwat

Costing of Neonatal Intensive Care Unit.
Ibrahim Afefi

Health Impact of Intervention.
Julia Walsh

Step Down.

- **Hospital Service Statistics.**

- **Costing of Activities to Promote Clean and Potable Water.**
Abd El Ghafar &

- **Costing of National Health Programs**
Brenzel

-
Logan Brenzel

- **Use of Cost Analysis for Management.**
Logan Brenzel

- **Effectiveness Study on Program Against Tobacco Abuse.**
Fatma Hassan

- **Study on Poliomyelitis in Egypt.**
Abd El Nasser Ahmed

- **Study of Neonatal Tetanus in Egypt.**
Sarah Azab

- **Development of Treatment Pattern for Hypertension.**
Fkria Yousef & Amr Edries

- **Effectiveness of Intervention.**
Julia Walsh

- **Why Cost Hospitals.**
Julia Walsh

- **Hospital Costs.**
Julia Walsh