
1997

Postabortion case load study in Egyptian public sector hospitals

Egyptian Fertility Care Society

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*Postabortion Case Load Study
in Egyptian Public Sector Hospitals*

Final Report



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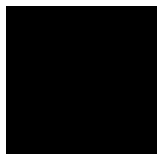
Final Report

Egyptian Fertility Care Center

Sub-contract No. C196.03A

The Population Council

Asia & Near East Operations Research and Technical
Assistance Project



This project was supported by the Population Council's Asia & Near East Operations Research and Technical Assistance Project. The ANE OR/TA Project is funded by the US Agency for International Development, Office of Population, under Contract No. DPE-3030-C-00-0022-00, Strategies for Improving Family Planning Service Delivery.

Acknowledgments

The Egyptian Fertility Care Society conducted this study as an element of a large program of work on improving postabortion care in Egypt that is underway in collaboration with the Population Council's ANE OR/TA Project Staff, with funding from USAID.

Several agencies and individuals are associated with these studies, most of whom have responsibilities that overlap each separate study. The combined effect of this participation is acknowledged and. The strong support and assistance extended by senior staff at the Ministry of Health and Population, and the National Population Council, was critical for initiation of the study, the identification of an appropriate study sample and gaining official Government of Egypt approvals to conduct the study in health care facilities.

The contributions made by the staff in each of the participating hospitals -- Administrators, Department Heads, Physicians, Nurses and Patients, are gratefully acknowledged. Without their cooperation the quality of the results would not have been ensured, nor would the study have been completed.

Finally thanks are due to the staff of the Egyptian Fertility Care Society for the hard work that they put into the study during its initial stages, monitoring the training programs, data collection and preparing for developing the final report.

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Executive Summary

There is an absence of reliable data on the incidence of incomplete abortions in Egypt. The number of women who present with complications from an incomplete abortion in the country's hospitals and health centers is not commonly reported in the Ministry of Health and Population's information system. Statistics that may be collected in a hospital on the number of cases that receive treatment for postabortion (spontaneous miscarriage or induced abortion alike) are frequently masked under the category of "In-Patient, OB/GYN Admission", which brings together several other diagnostic categories. In addition, hospitals differ on the type and quality of routinely collected statistics

A diagnostic, descriptive study that neither tests an experimental intervention nor evaluates in a comprehensive manner the quality of postabortion medical care was undertaken to address this issue. The study is a cross sectional observation of the volume and nature of the postabortion case load in Egyptian public sector hospitals, and it responds to the following short term objectives:

1. Accurately estimate the number of women who present for postabortion treatment in OB/GYN in-patient facilities as a percentage of OB/GYN admissions in a representative sample of Egyptian public sector hospitals (all categories) during one month.
2. Describe the medical and socio-demographic characteristics of the postabortion patients, including the cause(s) of the lost pregnancies, whether the pregnancy was wanted, and the medical treatments they receive (including infection control procedures) and contraceptive use history.

The study's sampling frame consists of the approximate 569 public sector hospitals in Egypt that include Ministry of Health and Population Teaching, General and District Hospitals and University Hospitals. Approximately 15% of the hospitals were randomly selected (n=86) with the probability of selection proportionate to the average number of beds in each hospital, using standard sampling procedures. The resulting list of hospitals was carefully reviewed by a panel of experts. Three data collection forms were employed by the study:

Medical Record Form

The Medical Record Abstract Form collected information on patient characteristics, medical findings upon admission, surgical procedures, other treatments used during hospitalization, and family planning history. The OB/GYN Department staff were trained to complete one form for each postabortion case admission during a continuous 30 day period, (data collection procedures are described below).

OB/GYN Tally Sheet

A daily tally sheet for all OB/GYN admissions was utilized in each of the OB/GYN departments that recorded the daily total of all obstetrics, gynecology and postabortion patient admissions.

Head OB/GYN Department Questionnaire

A brief, self-administered questionnaire was filled out by the Head of the OB/GYN department at each hospital that collected information on the staffing pattern of the department, the availability of postabortion medical supplies (e.g. instruments, antiseptics, etc.) and access to other sources of postabortion care in the vicinity of their hospital.

RESULTS

Approximately 94% of the Department Heads answered the self administered questionnaire. Major medical supplies in the OB/GYN wards are apparently routinely available. Pain control medication (analgesics and local anesthetics), and infection control supplies (masks and alcohol) scored the lowest, yet the absolute rank order for these supplies is not alarmingly low. There is not a significant difference in the availability of supplies by the type of hospital ($p < .08$). There is sharp breakdown in the availability of different types of postabortion related medical equipment as reported by the Department Heads, however. Sterilizers and instruments for D&C procedures are almost universally available. Vacuum aspiration related instruments are not commonly available.

Among the 22,656 total OB/GYN admissions to the study's 86 hospitals during the continuous 30 day period, approximately one out of every five patients (19%) were admitted for treatment of an abortion (excluding cases of threatened abortion). The WHO recommended protocol for classifying morbidity related to abortion using hospital based survey results was applied to this study. Only 5% of the postabortion patients can be classified as "certainly induced" (sign of trauma or self-report of inducing the abortion), whereas approximately one third (35%) are cases of spontaneous abortion (no other signs of abortion and the woman states the pregnancy was planned and desired). In between these two poles of certainty lie the majority of cases which are either possibly induced (58%) or probably induced (2%).

The study findings suggest that there are approximately 28,000 women who present for postabortion treatment in Egyptian public sector hospitals each month -- or about 336,000 a quarter of million patients per annum. Only about one third of the cases are classified as spontaneous miscarriage with certainty; the remainder can be considered as being largely avoidable through the provision of family planning.

The Postabortion Patients characteristics were also explored in this study. Overall the mean age of the postabortion patients is 27.43 years, ranging from 15 to 50 years ($n=4,151$). The patients' mean parity is 2.61, ranging from 0 - 10 ($n=4,132$) and the mean number of previous pregnancies is 3.22, ranging from 0 - 14 ($n=14.6$). Approximately 37%

(n=4,151) of the patients reported a previous miscarriage. The mean number of previous miscarriages among those patients is 1.59, ranging from 1 - 11 (n=1,523), which indicates that repeat miscarriages may be occurring with some frequency.

Several indicators of postabortion patients' family planning history are examined in the study. **Approximately 47% report having ever used a contraceptive method in the past, which is less than the 68% of ever use among ever-married women and 70% among currently married women reported in the 1995 Egyptian DHS.** There is a moderately strong intention to begin using a contraceptive method during the postabortion period: approximately 42% of the patients reported such an intention, although counseling was not provided to these patients. Among those who indicated an intention to use a contraceptive method, almost one half (48%) were actually provided a method prior to their discharge.

The overall mean duration of hospital stay is 16.7 hours for the postabortion patients. The mean gestational age of the pregnancies lost is 10.79 weeks (95% confidence interval is 10.7 to 10.9 weeks). A large majority (86%) had a gestational age of 12 weeks or less. There is a limited range of complications and very few cases of shock among postabortion admissions. 86% of the patients exhibited mild to moderate hemorrhaging, with the remainder presenting with severe bleeding. Less than 1% of the patients were diagnosed with one or more signs of trauma, and about 5% presented with signs of infection.

Dilatation and curettage (D&C) is the principal surgical technique used in the treatment of incomplete abortions in Egypt. Only 3% of the 4,071 patients who had some type of surgical procedure were treated with manual vacuum aspiration. Almost all (89%) of the patients received a general anesthesia, with only 3% receiving a local anesthetic. Some type of pre-operative or post-operative pain control medication was used with slightly less than one half (44%) of the postabortion patients, either alone (33% of the cases) or in combination (11%).

The study did not reveal an elevated case fatality rate estimate during the 30 day period: 0.43 per 100 admissions. This is probably due to the absence of severe bleeding, trauma, shock or infection among the postabortion patients, coupled with the large proportion who traveled less than 5 km. Of concern, however, is an indication that the fatalities appear to cluster in a few hospitals.

The study concludes with a number of actionable recommendations, chief among which is the critical need to upgrade the quality of the surgical materials available to physicians treating postabortion patients. **The need for routine procurement and distribution of manual vacuum aspiration instruments within the public sector is strongly suggested by these results. Linkages between postabortion care and family planning services need to be strengthened.**

INTRODUCTION

There is clear and consistent evidence that unsafe abortion is a leading cause of maternal mortality worldwide. Estimates of abortion-related deaths are imprecise, but fall within the range of 20 to 40 percent of all maternal deaths. Even this large number is probably underestimated due to the under-registration of maternal death counts in many countries, as well as the extremely sensitive nature of clandestine abortions in countries where it is legally restricted. The short and long term morbidity that is associated with illicit abortion are also quite significant. For many women who survive, there are a number of complications (including infection, hemorrhage, uterine perforation and cervical trauma) that are associated with long term morbidity, infertility and psychological damage.¹

By contrast, when medically indicated induced abortion is an extremely safe procedure when performed in the first trimester by skilled personnel. Vacuum aspiration is the preferred surgical method of abortion in the industrialized world, and is recognized by the World Health Organization as the best method for early induced abortions and the treatment of incomplete abortions. Extensive experience shows that use of manual vacuum aspiration reduces the cost of treating incomplete abortion, primarily by decreasing the duration of women's hospital stay.²

¹ McLaurin, Katie E., Hord, Charlotte E. and Merrill Wolf, "Health Systems' Role in Abortion Care: the Need for a Pro-Active Approach" Advances in Abortion Series, IPAS Carrboro, North Carolina; IPAS, 1991

² Greenslade, Forest C., Ann H. Leonard, Janie Benson, Judith Winkler, Victoria L. Henderson "Manual Vacuum Aspiration: A Summary of Clinical and Programmatic Experience Worldwide" Carrboro, North Carolina; IPAS, 1993

Egypt's abortion policy is usually classified as 'rather restrictive' on a worldwide scale, as it is a country that permits abortion only for maternal health risk considerations. Islamic theologians in Egypt generally view the termination of a pregnancy to save a woman's life as acceptable, even beyond the 120 days that is frequently cited. If an abortion is performed for reasons other than saving the woman's life then both the woman and the provider are subject to legal and religious prosecution. Even if a pregnancy is terminated within the prescribed period and for the health reasons of the pregnant woman, abortion is an extremely delicate and sensitive issue in Egypt. As a consequence, there is an absence of reliable data on the incidence of incomplete abortions in Egypt. Population based surveys, such as the 1995 Egyptian Demographic and Health Survey, consistently result in substantial under-reporting of abortion activity. The number of women who present with complications from an incomplete abortion in the country's hospitals and health centers is not commonly reported in the Ministry of Health's information system. Statistics that may be collected in a hospital on the number of cases that receive treatment for postabortion (spontaneous miscarriage or induced abortion alike) are frequently masked under the category of "In-Patient, /GYN Admission", which brings together several other diagnostic categories. In addition, hospitals differ on the type and quality of routinely collected statistics.

An accurate estimation of national postabortion patient case load for all hospitals in Egypt is not currently available. This type of data is a critically important complement to the on-going program of operations research on postabortion care being conducted by the EFCS and the ANE OR/TA project in Egypt. The 1994 pilot study indicated the

possibility of making significant improvements in the medical care and counseling of postabortion patients.³ The small scale expansion program currently underway examines the cost-effectiveness of these improvements, and the impact on the quality of care when conducted on a larger scale.

Case load estimates are an important complement to this program of research for the following reasons:

1. Policy development on postabortion care should be guided by information on the volume of patients in order to rationally allocate health care and family planning resources.
2. Information on the number of cases is vital for producing accurate commodity requirements for MVA cannulae, both for the immediate needs of the small scale expansion of the pilot OR study and for the development of a sustainable strategy in the long term.
3. An understanding of the magnitude of the health problem will assist in developing a training strategy for health care providers.

STUDY OBJECTIVES

Long Term Objective

The study addresses the following long term objective:

The study will contribute to the development of health care interventions designed to decrease the risk of mortality and morbidity associated with incomplete abortions in Egypt, as well as reducing the incidence of unwanted pregnancy through the increased use of family planning services.

Short Term Objectives

The study addresses the following short term objectives:

³ Definitions are based upon Complications of Abortion: Technical and Managerial Guidelines for Prevention and Treatment, World Health Organization, Geneva 1995

1. Accurately estimate the number of women who present for postabortion treatment in OB/GYN in-patient facilities as a percentage of OB/GYN admissions in a representative sample of Egyptian public sector hospitals (all categories) during one month.
2. Describe the medical and socio-demographic characteristics of the postabortion patients, including the cause(s) of the lost pregnancies, whether the pregnancy was wanted, and the medical treatments they receive (including infection control procedures) and contraceptive use history.

STUDY DESIGN

This is a diagnostic, descriptive study that neither tests an experimental intervention nor evaluates in a comprehensive manner the quality of postabortion medical care. It is a cross sectional observation of the volume and nature of the postabortion case load that Egyptian public sector hospitals routinely receive.

Sampling

The study's sampling frame consisted of the 538 Ministry of Health and Population hospitals in Egypt (that include Ministry of Health Teaching, General and District Hospitals) and 31 Medical University Hospitals yielding a total sample frame of 569 hospitals which is approximately 95% of the governmental facilities.⁴ A probability sample was drawn according to the following procedures. A list of all these hospitals was compiled noting the number of beds in each site, which served as a proxy measure of the OB/GYN case load. The listing of hospitals was reviewed by the EFCS Executive Director, the Under-Secretary for Family Planning and other MOHP officials to confirm its accuracy

⁴ Ministry of Health and Population, Basic Statistical Data 1993

and completeness. Approximately 15% of the hospitals were randomly selected (n=86) with the probability of selection proportionate to the average number of beds in each hospital, using standard sampling procedures. The resulting list of hospitals was carefully reviewed to replace a few geographically isolated hospitals (that would drive up the data collection costs) with another randomly selected hospital. In addition, the final listing was reviewed to ensure wide geographic distribution across lower and upper Egypt, and Cairo. Again, a few hospitals were replaced in the sample at this stage before the final sample was established for the study. The 10 hospitals that are the sites of the postabortion care expansion program were purposively added to the final list if they were not randomly selected by the above procedures. In this manner 86 hospitals were chosen as a basis for estimating the postabortion case load.

Data Collection Forms

Head of OB/GYN Department Questionnaire

A brief, self-administered questionnaire was filled out by the Head of the OB/GYN department at each hospital. This questionnaire collected information on the staffing pattern of the department, the availability of postabortion medical supplies (e.g. instruments, antiseptics, etc.) and access to other sources of postabortion care in the vicinity of their hospital; (a copy of this form is attached in the appendices).

The study utilized three data collection forms:

- ▶ *Head of OB/GYN Department Questionnaire*
- ▶ *OB/GYN Tally Sheet*
- ▶ *Medical Record Form*

OB/GYN Tally Sheet

A daily tally sheet for all OB/GYN admissions was utilized in each of the OB/GYN departments that recorded the daily total of all obstetrics, gynecology and postabortion patient admissions; (a copy of this form is attached in the appendices).

Medical Record Form

The Medical Record Abstract Form developed by the pilot operations research on postabortion was modified for use in this study. This form collects information on patient characteristics, medical findings upon admission, surgical procedures, other treatments used during hospitalization, and family planning history. The last indicator included information on the 'wantedness' of the pregnancy which was just lost and contraceptive practice at the time of conception. The OB/GYN Department staff was requested to complete one form for each postabortion case admission during a continuous 30 day period, (data collection procedures are described below).

DATA COLLECTION PROCEDURES

Organization of Field Work

Data collection was managed in a decentralized manner. There was one data collection field supervisor per every 6 hospitals (approximately). The field supervisors participated in an orientation session held by EFCS prior to beginning the data collection activities. Two orientation sessions were held at EFCS, one for supervisors who work as physicians and the other for non-physician supervisors. The field supervisors were responsible for introducing the data collection forms to the hospitals assigned to them, supervising the use of the forms during a continuous 30 day period, collecting the forms for submission to EFCS and disbursing the data collection payments to the appropriate OB/GYN Department staff.

A letter from the Under Secretary for Family Planning at the MOHP was sent with

the supervisors to formally approve the participation of each hospital in the conduct of the case load study. A meeting was convened in each of the 86 hospitals in which the field supervisor introduced the study to the hospital Director, the Head of the OB/GYN Department and all senior attending physicians. The field supervisors explained the purpose of the study, the data collection forms and procedures for their use.

In each hospital, the Head of the OB/GYN department was assigned the overall responsibility of ensuring the correct and complete utilization of the data forms with all postabortion patients admitted for care during a continuous 30 day period. The number of staff assigned at each hospital for data collection was based upon the organization of responsibilities within the OB/GYN in-patient wards and the availability of staff. The Head of the OB/GYN department was responsible for the immediate supervision of the staff assigned to complete the data collection form for each postabortion patient whereas the supervisors were responsible for the continuous monitoring of the form filling by the OB/GYN staff in each hospital assigned to them.

RESULTS

The Head of Department Questionnaire

The Heads of OB/GYN Departments in 81 of the 86 hospitals included in the study completed the self-administered questionnaire, yielding a response rate of approximately 94% for this instrument. The results from this abbreviated schedule are presented in this section, and are intended to provide a capsule summary of the postabortion service environment in the Egyptian public sector hospitals.

Health Care Providers

**Table 1
Type of Health Care Provider Working in the OB/GYN Departments**

Hospital Type	Physicians			Nurses	
	House Officer (n=455)	Resident (n=750)	Specialist (n=1,188)	Specialized (n=344)	General (n=1,109)
General (n=17)	13	48	28	23	20
District (n=48)	9	28	30	13	22
Teaching (n=4)	3	6	5	5	5
University (n=12)	75	18	37	59	53
Total	100%	100%	100%	100%	100%

The study was largely conducted in district hospitals, representing approximately 56% of the hospitals in the sample, corresponding to relative importance of district hospitals within the overall tertiary care structure in Egypt, followed by general hospitals (20%) and University (14%).

Table 1 presents results concerning the OB/GYN staffing patterns in the hospitals where the Department Heads completed the questionnaires. It is therefore suggestive of the training needs in improved postabortion medical procedures. The largest category of health personnel working in the OB/GYN Departments are physicians who are specialists in the field (n=1,188). This group is predominately located in University hospitals (36.9%), District (30.0%) and General hospitals (28.4%). Resident physicians are the next most common type of medical personnel, and almost one half (47.5%) of the 750 residents are

working in General hospitals. Almost three quarters of all the House Officers are located in University hospitals. The pattern of Nursing staff assignments corresponds to physicians. Although specialized nurses are fewer than general nurses (344 versus 1,109 respectively) they are largely concentrated in University and General Hospitals. As Table 1 reveals, most nurses (specialized and general) are predominately found in University hospitals.

**Table 2
Type of Health Care Provider**

Hospital Type	Physicians				Nurses		
	House Officer	Resident	Specialists	Total	Specialized	General	Total
General	8	47	45	100% (n=751)	26	74	100% (n=303)
District	7	34	59	100% (n=604)	16	84	100% (n=290)
Teaching	12	42	46	100% (n=118)	25	75	100% (n=67)
University	37	15	48	100% (n=920)	26	74	100% (n=793)

Table 2 examines the same patterns as Table 1, but configures the results so that the staffing pattern by hospital type is revealed. This table shows that specialists and residents are the most common category in all types of hospitals except Universities, where House officers are proportionally more substantial than residents. Anecdotal information consistently suggests that residents perform the large majority of the postabortion procedures. The large number of staff assigned to University Hospitals is clear in Table 2. The pattern of nursing staff is fairly constant, with the ratio of general to

specialized nurses ranging around 3 to 1 in most types of hospitals.

Availability of Other Sources of Postabortion Care

The Heads of the OB/GYN Departments were asked to indicate other sources of postabortion care in the vicinity of their hospital. Figure 1 shows that among the 80 Heads of Department that responded to this question, the most common source of care is a private clinic

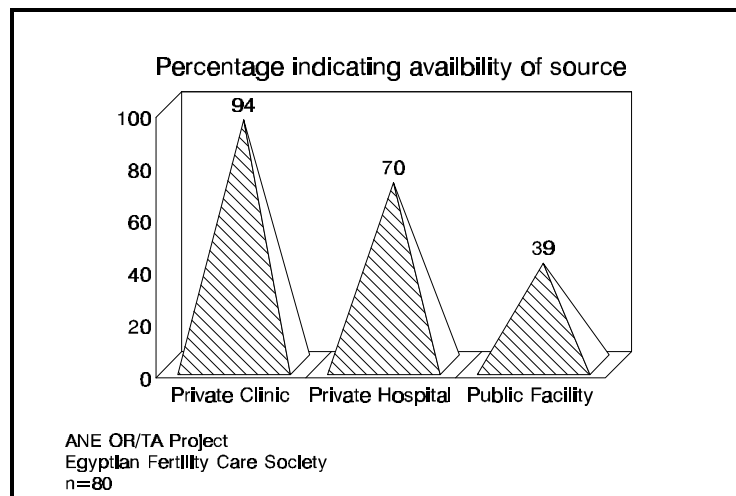


Figure 1: Availability of Other Sources of Postabortion Care in nearby Vicinity (as indicated by heads of OB/GYN departments)

(approximately 94%), followed by private hospital (70%) and other public facility (approximately 39%). District Hospital department heads were more likely to indicate a private clinic (60% of the private clinics were indicated by them), whereas public facilities were most likely indicated by heads of University OB/GYN departments (approximately 33% of the public facilities were indicated by them).

Medical Supplies and Equipment

The Head of the OB/GYN Departments were asked to indicate if their departments had experienced shortages of essential medical supplies and equipment during the past three months. The responses were rated from 0 to 10, with 0 being “Never Available”, the mid-point representing “Occasionally Available” and the perfect score of 10 as “Always Available”. Although these findings were not confirmed by an inventory of the availability

of these supplies and equipment during the month of data collection, the results presented in this section are an indication of the ability of the public sector hospitals to provide quality medical services.

Medical Supplies

The reports from the Heads of OB/GYN Departments indicate that medical supplies are routinely available, as shown in the mean rank orders presented in Figure 2. Pain control medication (analgesics and local anesthetics), and infection control supplies (masks and

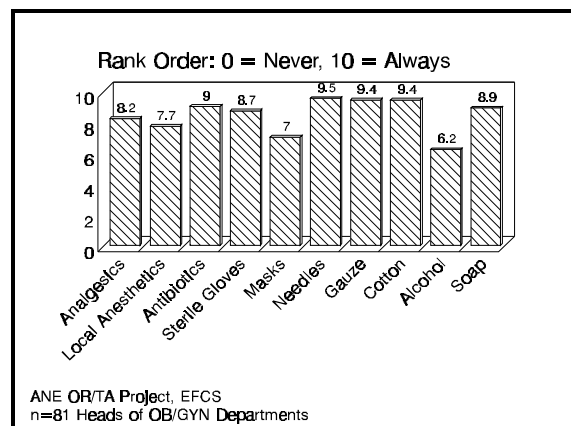


Figure 2: Availability of Medical Supplies in OB/GYN Departments

and infection control supplies (masks and alcohol) scored the lowest, yet the absolute rank order for these supplies is not alarmingly low. Only about one quarter (28%) of the 81 Department Heads indicated a score of 7 or below, and fully 17 Department Heads reported that all supplies are always available (perfect score of 10). There is no a significant difference in the availability of supplies by the type of hospital ($p < .08$), with General Hospitals reporting the lowest mean score of 8.08, compared to University Hospitals which reported the highest mean score of 9.34, indicating a consisted availability of medical supplies.

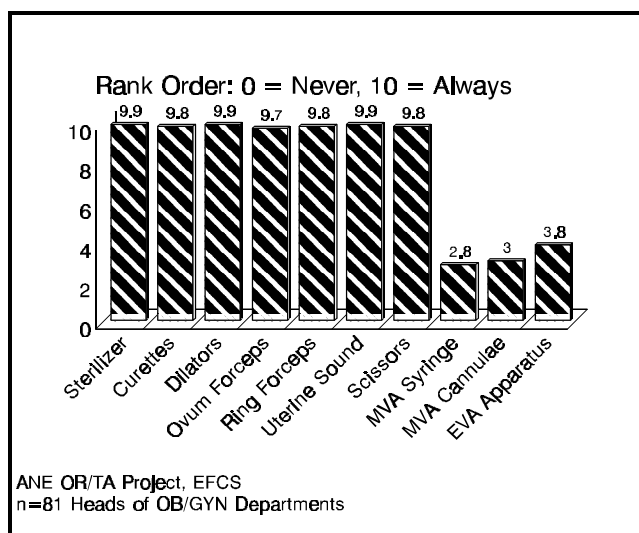


Figure 3: Availability of Medical Equipment in OB/GYN Departments

There is sharp contrast in the availability of different types of postabortion related medical equipment as reported by the Department Heads. Sterilizers and instruments for D&C procedures are almost universally available. Vacuum aspiration related instruments are not commonly available, (Figure 3). The relative low scores for vacuum aspiration instruments negatively effects the overall mean score of 7.02 on the availability of all types of medical equipment. For example, approximately 63% of the Department Heads indicated that taken together, the overall availability of medical equipment was ranked lower than 7. In addition, there is a significant difference in the availability of medical equipment by the type of hospital ($p < .008$), with General and District Hospitals scoring lower overall means (6.6 and 6.8 respectively) than Teaching and University Hospitals (7.9 and 8.0 respectively).

Medical Records

Case Load Estimates

A daily tally sheet recorded the number of admissions to each hospital's OB/GYN in-patient departments, by the reason of admission (e.g., obstetrics, gynecology, postabortion). The results presented in Figure 4 reveal that among the 22,656 admissions to the study's 86

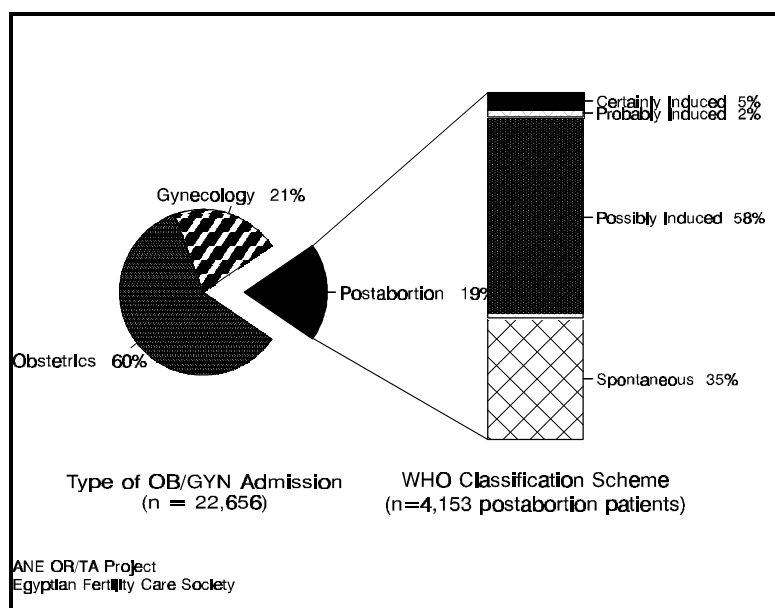


Figure 4: OB/GYN Department Admissions during 30 Day Period in Egyptian Public Sector Hospitals

hospitals during a continuous 30 day period, approximately one out of every five patients (19%) were admitted for treatment of an abortion, excluding those patients who were admitted for observation of a threatened abortion. The WHO recommended protocol for classifying morbidity related to abortion using hospital based survey results was applied to this study.⁵ This protocol provides guidelines for classifying abortion cases according to criteria provided by the patient herself (e.g., contraceptive use at the time of the pregnancy, wantedness status of the pregnancy) and/or complications related to induced abortion noticed upon admission (e.g., foreign body in the genital tract, evidence of trauma, or uterine sepsis). The results presented in Figure 4 show that only 5% of the postabortion patients can be classified as “certainly induced” (sign of trauma or self-report of inducing the abortion), whereas approximately one third (35%) are cases of spontaneous abortion (no other signs of abortion and the woman states the pregnancy was planned and wanted). In between these two poles of certainty lie the majority of cases which are either possibly induced (58%) or probably induced (2%). WHO defines “probably” induced cases as when (1) the woman has signs of sepsis or peritonitis, and (2) the woman states the pregnancy was unplanned; “possibly” induced cases are defined when the woman has only one of the two signs of “probably induced”. There is a significant difference ($p < .0000$) in patients’

Over 30 days period, approximately one every five patients were admitted for treatment of an abortion. According to the WHO classification, one third of these cases were spontaneous miscarriages, 58% possibly induced, 2% probably induced and 5% were classified as certainly induced.

⁵ World Health Organization, "Protocol for Hospital Based Descriptive Studies of Mortality, Morbidity Related to Induced Abortion" WHO Project No. 86912, Task Force on Safety and Efficacy of Fertility Regulating Methods, revised edition of 14 August, 1987.

mean age across the four categories of the WHO Classification Scheme. Patients' mean age who are classified as "certainly induced" is 30.41 years, "probably induced" is 29.25 years, "possibly induced" is 28.16 years and "spontaneous" is 25.68 years. Patients who certainly induced the abortion are hence more likely to be older than other categories, while miscarriage patients are more likely to be younger.

Postabortion Patient Characteristics

Table 3
Postabortion Patients' Characteristics

Characteristic	No. N=4153	Percentage
Age:		
<14	2	00.0
15-19	353	08.5
20-24	1094	26.3
25-29	1117	26.9
30-34	779	18.8
35-39	569	13.7
40-44	194	04.7
45+	45	01.1
Mean 27.4		
S.D. 6.5		
Education:		
No education	2547	61.3
Primary	992	23.9
Secondary	530	12.8
University	84	2.0
Parity:		
Nullipara	668	16.1
1-2	1575	37.9
3-5	1498	36.1
6+	412	9.9
Mean 2.61		
S.D. 2.2		

A total of 4,153 women were admitted to the 86 hospitals for postabortion care.

Overall, the mean age of the postabortion patients is 27.43 years, the large majority ranging from 15 to 50 years (n=4,151 -- excluding the two cases less than 14 years). Approximately 61% of the postabortion patients do not have any formal education, 24% have obtained primary education, 13% have secondary and 2% have gone to a university (n=4,153). The patients' mean parity is 2.61, ranging from 0 - 10 (n=4,132) and the mean number of previous pregnancies is 3.22, ranging from 0 - 14 (n=4,146). Approximately 37% (n=4,151) of the patients reported a previous miscarriage. The mean number of previous miscarriages among those patients is 1.59, ranging from 1 - 11 (n=1,523). Very few patients reported having previously (i.e., prior to the pregnancy just lost) induced an abortion: only 1.69% of the 4,153 cases. Among those who self-reported a previous abortion (n=70) the mean number of induced abortions was slightly higher than one (mean = 1.07, range 1 - 3), indicating the possibility of repeated abortions among this group of women. Only 4% of the postabortion patients stated that the abortion they just received treatment for was intentionally induced. Women who reported inducing the abortion are more likely to have been self-referred to the hospital for treatment (approximately 59%), than having been referred, (41%)

Accessibility of Medical Treatment for Incomplete Abortion

Approximately 56% of the 4,153 postabortion patients reported that they traveled more than 5 kilometers to the hospital where they received medical treatment for the incomplete abortion (conversely, about 44% traveled 5 km or fewer). Overall, two thirds of the 4,153 postabortion patients (69%) indicated that they were self-referred to the hospital; 19% were referred by a private health care provider, 9% were referred by a public

health care facility and 3% were referred by a daya (or traditional mid-wife). There is probably a degree of response error in these two findings on distance traveled and source of referral. Some women will prefer to seek treatment for an incomplete abortion under conditions of anonymity, thus hiding previous contacts with health care providers or traveling a greater distance than necessary for care.

Family Planning History

Several indicators of postabortion patients' family planning history are presented in Figure 5. Approximately 47% report having ever used a contraceptive method in the past, which is less than the 68% of ever use among ever-married women and 70% among currently married women reported in the 1995 Egyptian DHS.

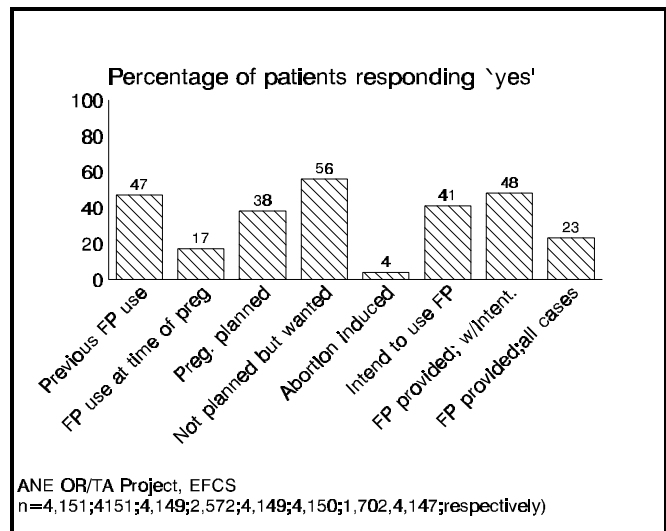


Figure 5: Family Planning History among Postabortion Patients in Egypt

Slightly less than one fifth (17%) of the postabortion patients reported having used a contraceptive method at the time they became pregnant with the fetus that was just aborted. Approximately 38% stated that the pregnancy just lost was planned whereas about 56% of the patients reported that although the pregnancy was not planned it was in fact wanted. There is a moderately strong intention to begin using a contraceptive method during the postabortion period:

Approximately 41% of the postabortion patients reported an intention to use a family planning method. Among those, only one half (48%) were actually provided a method prior to their discharge.

approximately 41% of the patients reported such an intention. This proportion is slightly lower than the results from the 1995 Egyptian DHS that indicates 58% of currently married nonusers have the intention to use a family planning method some time in the future (although the two studies involve different samples which weakens the comparison). Among those who indicated an intention to use a contraceptive method, almost one half (48%) were actually provided a method prior to their discharge. Overall, among all of the 4,147 postabortion patients slightly less than one quarter (23%) were provided with a contraceptive method before they left the hospital.

Medical Findings Upon Admission

Overall the mean duration of hospital stay is 16.7 hours for the postabortion patients, ranging from 1 to 248 hours. Despite this considerable range there is little variation around the mean: a 95% confidence interval bracketing the mean is 15.9 hours to 16.83 hours.

The mean gestational age of the pregnancies lost by postabortion patients is

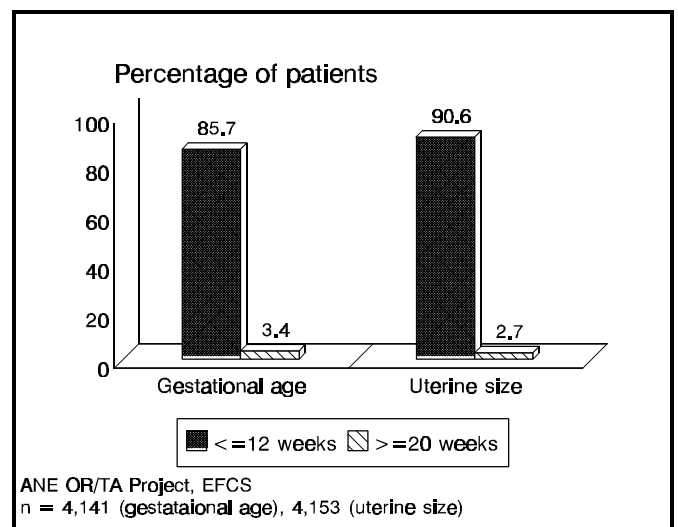


Figure 6: Gestational Age and Uterine Size, Postabortion Patients in Egypt

10.79 weeks, ranging from 2 to 28 weeks.⁶ A 95% confidence interval reveals little variation around this mean: 10.7 weeks to 10.9 weeks. Figure 6 reveals that the large majority of the cases (86%) had a gestational age of 12 weeks or less. Uterine size is closely correlated to the gestational age ($r^2=.84$), with the mean uterine size estimated at 10.4 weeks, ranging from 0 to 28 weeks). A 95% confidence interval reveals little variation around this mean: 9.94 weeks to 10.13 weeks. Almost all of the cases (90.6%) presented with a uterine size of 12 weeks or less.

The initial assessment of the abortion cases (excluding threatened abortion) is presented in Figure 7.

Approximately 44% of the cases are inevitable abortions, i.e., the patient presented with bleeding and the cervix was dilated. A little over one third of the patients (37%) are incomplete abortions, i.e., bleeding, dilated cervix and a partial expulsion of the products of conception are present. Approximately 14% of the

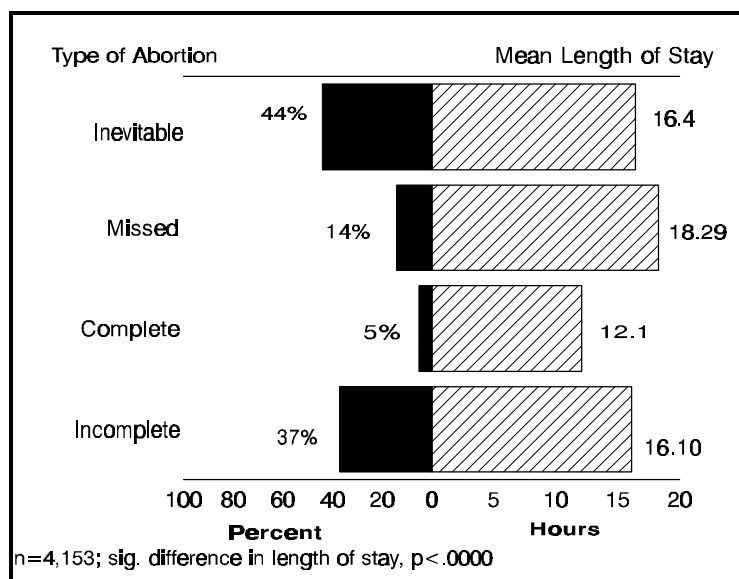


Figure 7: Length of Stay at the Hospital by the Type of Abortion Diagnosed at Admission

⁶ WHO recommends 28 weeks as the upper gestational limit in defining abortion “because it is used by most of the countries that have adopted a definition of abortion, because it complements the definition of stillbirth recommended by the WHO Expert Committee on Health Statistics, and because it corresponds to a definition given in the International classification of Diseases” (Spontaneous and Induced Abortion, WHO Geneva, 1970). Egypt does not have an officially endorsed definition of abortion. The point is relatively unimportant in the classification of postabortion patients, however, as only 3.27% of the fetal deaths had a gestational age of 20-27 weeks.

cases are missed abortions, i.e., fetal demise with delayed expulsion in addition to other signs. There is a significant difference in the duration of stay by the type of abortion, ($p < .0000$) providing another indication of the relation between increased severity and duration of stay. Complete abortions

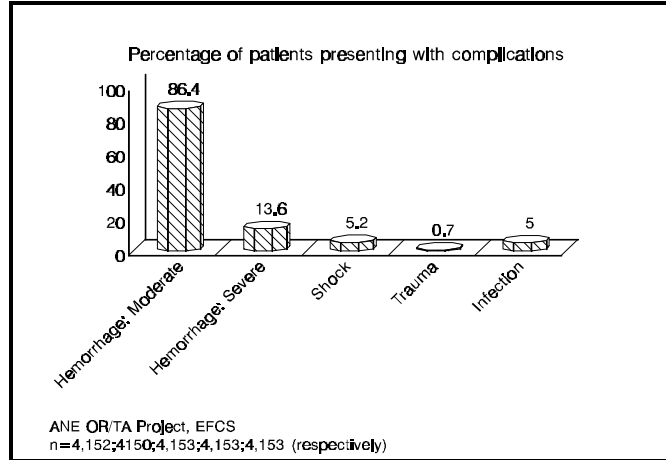


Figure 8: Type of Complications Upon Admission Among Postabortion Patients in Egypt

had a shorter length of stay (12.1 hours) than inevitable (16.44 hours), incomplete (16.10 hours) or missed (18.29 hours). The results presented in Figure 8 clearly show a limited range of complications and few cases of shock in the majority of the cases. Only about 14% of the cases presented with excessive blood loss, while the remaining 86% exhibited mild to moderate bleeding. Patients with severe hemorrhaging were 1.26 times (odds ratio's confidence interval is 1.04 to 1.51) more likely to have traveled more than 5 kilometers to the hospital than patients who were admitted with mild to moderate hemorrhaging. As a consequence of their deteriorated condition, patients with extreme blood loss upon admittance were significantly more likely ($p < .0045$) to have a longer duration of hospital stay (16.64 hours) than patients with mild to moderate. The medical record form included reference to three signs of trauma: vaginal and cervical tears, and uterine perforation. Less than 1% (0.7%) of the patients were diagnosed with one or more of these signs. In a similar manner, there were very few (4.96%) postabortion patients who presented with one or more signs of infection (fever, foul discharge, salpingitis, peritonitis).

Among those patients who presented with signs of trauma, approximately 28% also had a sign of infection. Patients who presented with severe hemorrhaging were also more likely to be in shock or show signs of trauma: 35% exhibited shock and 2.5% showed one or more signs of trauma, as opposed to patients with mild or moderate hemorrhaging where only 0.6% were in shock and 0.4% had one or more signs of trauma. Patients with severe hemorrhaging are 1.26 times more likely to have traveled 5 km or less to the hospital than are patients with mild hemorrhage.

Surgical Procedures and Medical Treatment

Dilatation and curettage (D&C) is the principal surgical technique used in the treatment of incomplete abortions in Egypt. Almost all of the 4,153 postabortion patients (98%) underwent a surgical procedure. Only 3% of these were treated with manual vacuum aspiration, and of those almost three quarters (72%) were from

Menia University Hospital which was a site of

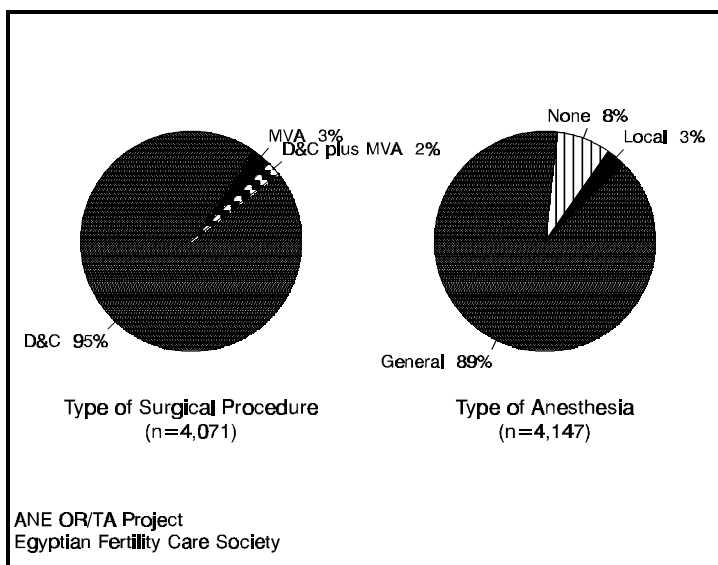


Figure 9: Type of Surgical Procedure and Anesthesia Used in Treating Postabortion Patients

Almost 95% of incomplete abortion cases are treated with Dilation & Curettage (D&C). Only 3% are treated with manual vacuum aspiration. Majority of surgical procedures (89%) were done under general anesthesia.

the pilot project that introduced MVA.⁷ A very small proportion (approximately 2%) of the patients were treated with both a D&C and MVA, and most of those (76%) were in Menia University Hospital. Figure 9 does not include reference to the 5 patients who were treated with electric vacuum aspiration (0.12% of the 4,076 patients in total who received a surgical treatment). Also excluded from Figure 9 are the 77 patients (1.85% of the total 4,153 cases in the sample) who either did not receive any surgical treatment (as the products of conception were completely expelled) or who were missing cases.

There is a significant difference in the mean duration of stay according to the type of surgical procedure used in the treatment of the postabortion patients ($p < .0104$): Patients treated with D&C stayed in the hospital on average 16.51 hours as compared to 14.34 hours for MVA patients and 11.14 hours for D&C plus MVA patients.

The 5 cases treated with electric vacuum aspiration had a mean gestational age of 17.2 weeks, which is significantly higher (prob $F > .0000$) than the 10.66 weeks for D&C cases, 10.68 weeks for MVA and 10.74 weeks for D&C plus MVA cases.⁸

⁷ "Improving the Medical Care and Counseling of Postabortion Patients in Egypt" Final Project report, The Population Council's ANE OR/TA Project and the Egyptian Fertility Care Society, 1995

⁸ Duration of stay is affected by several factors in addition to the surgical procedure, as suggested by its association with several other indicators in this study. In addition some variables were not measured that can effect length of stay, chiefly a hospital's policies regarding discharge procedure.

Figure 9 also shows that general anesthesia is used with almost all (89%) of the postabortion patients. A D&C procedure under general anesthesia carries a two to fourfold increased risk of mortality compared to vacuum aspiration under a local anesthesia.⁹ Among the 3% of the cases that received a local anesthesia, approximately 92% were in University hospitals -- 90% of which occurred in Menia University Hospital (the site of the pilot study on improving postabortion care). Those patients who did not receive any anesthesia (8%) were more likely to be treated in district hospitals (54% of the 8%) or general hospitals (29% of the 8%). Figure 9 does not include reference to the 2 cases that received a spinal anesthesia (0.05% of the 4,149 cases with available information on the type of anesthesia).

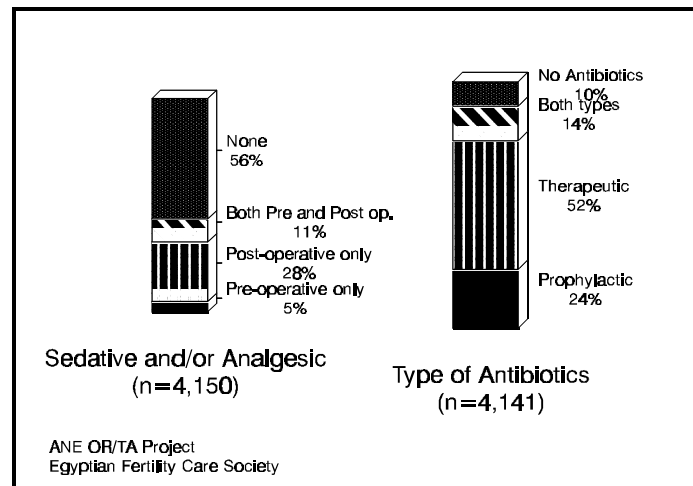


Figure 10: Medications Administered to Postabortion Patients

Some type of pre-operative or post-operative pain control medication was used with slightly less than one half (44%) of the postabortion patients, either before or after the intervention (33% of the cases), or in combination (11%), (Figure 10). Less than one half (43%) of the patients who received a general anesthesia also were given a pre- and/or

⁹ Petersen, H.B., et.al. "Comparative Risk of Death from Induced Abortion at 12 weeks or less Gestation Performed with Local versus General Anesthesia" American Journal of Obstetrics and Gynecology, vol. 141; 763-68; 1981.

post-operative sedative or analgesic. In comparison, almost all of the patients (approximately 96%) who received a local anesthesia also received a pre- and/or post-operative sedative or analgesic. Very few patients (approximately 10%) did not receive any type of pain control medication -- either an anesthetic alone or combined with a pre- or post-operative sedative or analgesic, (Figures 9 and 10). Figure 10 also presents information pertaining to the administration of antibiotics in postabortion treatment. It clearly shows a liberal use of therapeutic (52%) and prophylactic (24%), or a combination of both types (14%) as an element of the postabortion case management protocol being practiced in Egyptian public sector hospitals. It was noted that, among the approximately 5% of the cases that presented with signs of infection about 3% (n=404) did not receive any antibiotic prior to her discharge. The relatively high proportion of patients who received therapeutic antibiotics (52%) does not correspond to the small proportion of patients who presented with signs of infection (5%), suggesting a misclassification of therapeutic antibiotics and a corresponding increase in the proportion of patients receiving a prophylactic antibiotics.

The study collected information on three other types of medications administered to postabortion patients: oxytocin, intravenous fluids and blood transfusions. These are presented in Figure 11. Approximately one half of the postabortion patients received oxytocin or intravenous fluids, with fewer patients (approximately 7%) receiving a blood

transfusion. The mean gestational age among patients who received oxytocin is 11.18 weeks, which is significantly higher (prob $F > .0000$) than the mean gestational age of 10.29 weeks among patients who did not receive oxytocin.

Among the 2,390 postabortion patients who received intravenous

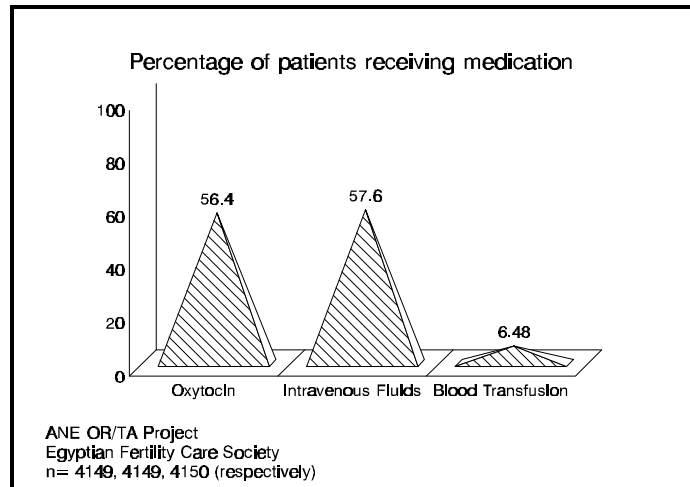


Figure 11: Medications Administered to Postabortion Patients in Egypt

fluids, 39% of the cases occurred in University hospitals and an additional 38% occurred in district hospitals. Of the 216 patients who were admitted with signs of shock the large majority (92%) were treated with intravenous fluids. The average duration of stay was significantly less for patients who received intravenous fluids (15.71 hours) than for patients who did not receive any fluids (17.29 hours), $p < .0000$, suggesting the beneficial effect of providing fluids on patient recovery.

Blood transfusions were infrequently administered to postabortion patients. When given, however, about one half (53%) of the 269 cases were in University hospitals. Patients with severe hemorrhaging were significantly more likely ($p < .000$) to have received blood transfusions (approximately 30% of the 565 cases) than patients with mild / moderate bleeding (approximately 3% of the 3,584 cases).

Patient Outcome

Table 4
Distribution of Postabortion Fatalities by Type of Hospital

Type of Hospital	Number of Postabortion Admissions	Number of Facilities (Among the 4,152 cases)	Fatalities as a percent of Postabortion Admissions
Frontier General Hospital	22	5	22.7
Lower District Hospital	9	1	11.1
Lower District Hospital	14	1	7.4
Lower General Hospital	34	2	5.8
Upper District Hospital	26	1	3.8
Lower District Hospital	34	1	2.9
Lower General Hospital	115	3	2.6
Lower District Hospital	42	1	2.3
Lower Teaching Hospital	51	1	1.9
Upper General Hospital	54	1	1.8
Lower University Hospital	76	1	1.3
Total	477	18	

The medical record form included a single measure of patient status upon discharge: alive or dead. Table 4 shows that only 18 of the 4,153 patients died during the hospitalization for postabortion treatment, or a case fatality rate of 0.43 per 100 admissions. Approximately 56% of those deaths occurred in three of the eleven hospitals that had a fatality. One of those hospitals had a case fatality rate during the 30 day period of approximately 23 per 100 admissions --- which is quite elevated. Among the deceased, one third (33%) were admitted with severe hemorrhaging, 17% with signs of trauma and 17% with signs of shock.

CONCLUSIONS

The sample of hospitals included in this study represents about 15% of the public

sector hospitals operating in Egypt today. Taking this proportion as a starting point, an extrapolation of the case load figures collected in the study suggest that there are approximately 28,000 women presenting for postabortion treatment in Egyptian public sector hospitals each month, or about a 336,000 postabortion patients per annum. The significance of this estimate is increased when it is seen that only about one third of these cases are spontaneous miscarriages. The remaining cases -- about a quarter of a million patients per year -- can be considered as being largely avoidable. This finding draws attention to the use of scarce medical resources for the treatment of a condition that can be avoided through the provision of family planning to avoid unwanted and unplanned pregnancies.

There is some evidence in the study's findings that an important group of patients have suffered repeat miscarriages and a smaller, yet still important group has experienced repeated induced abortions. The special needs of these two types of patients should be addressed in the services they receive. The accessibility of medical care services for postabortion patients appears reasonably good, as just under one half of the patients reported traveling for less than 5 Kms and the wide spread availability of private and other public sector sources of care indicated by the OB/GYN Department Heads. In addition, two-thirds of the patients reported that they are self-referred -- which may be an indication of wide spread practices to self-induce the abortion or of women's fear of miscarriages. More research is needed on the abortion practices in Egypt to clarify issues surrounding induced and spontaneous abortions.

The findings relating to family planning history are most revealing of how

postabortion patients have not been able to take advantage of Egypt's well developed family planning program. There is a relatively small proportion of patients who are "ever users" of a contraceptive method -- smaller than the national sample reported on in the 1995 Egyptian DHS. Linkages with the family planning program are clearly indicated as being needed, but the study's findings show that such linkages are not strong. Slightly less than one half of the postabortion patients who stated an intention to begin using a contraceptive method actually received one prior to leaving the hospital.

The majority of the study's findings relate to indicators of the medical treatment provided to incomplete abortion patients in Egypt. It is remarkable that the type and severity of the complications these patients present with are largely benign. Mild or moderate hemorrhage dominates the presenting symptoms, most commonly accompanied by an absence of shock, trauma or infection. Taken together these signs suggest that women are prompt about seeking treatment for the incomplete abortion, and that any self inflicted acts to induce an abortion do not involve dangerous mechanical instruments. Attention should not be drawn away from the relatively few patients who did present with severe hemorrhage: these patients are in acute need and are likely to require prompt treatment for shock and a surgical intervention for trauma. Their condition is further aggravated by the increased likelihood that they traveled a greater distance to the hospital.

An encouraging finding relates to the strong evidence that the pilot study on improving the postabortion medical treatment has been sustained. This is clearly seen in the use of manual vacuum aspiration instruments which, although not commonly used in Egypt, are predominantly found in one of the two hospitals that participated in the 1994

training program.

The use of D&C dominates the customary surgical practice for treating incomplete abortions in Egypt. This procedure, coupled with an over reliance upon general anesthesia is troubling. Local anesthesia is infrequently used and is likely to be associated with the innovation of MVA as introduced into Menia University Hospital. Pain control is an important dimension of quality postabortion health care services. The type of medication and its timing are critical aspects of effective case management. Pre-operative and post-operative sedation or analgesics are customary elements in clinical protocols, yet less than one half of the postabortion patients received either of these medications, however.

The study reveals an overly liberal use of antibiotics in the treatment of incomplete abortions in Egypt. Although only about 5% of the patients were diagnosed with a sign of infection approximately 90% received some type of antibiotic. The sub-standard aseptic procedures that exist in most hospitals probably contributes to the over use of antibiotics, yet considerations should be given to revising clinical protocols that can contribute to the emergence of resistant strains of bacterial infections. The use of oxytocin and intravenous fluids appears more rational, by comparison. Oxytocin was more likely to be used with later gestational ages. Fluids were likely to be administered to patients in shock, and were associated with a shorter length of stay (indicating a beneficial effect on recovery). Blood transfusions may not be provided as frequently as indicated. Although about 14% of the patients had severe bleeding only about one third of those patients received a blood transfusion.

The incomplete abortion case fatality rate among the patients in this study during the 30 day period is 0.43%. This is probably due to the absence of severe bleeding, trauma, shock or infection among the postabortion patients, coupled with the large proportion who self-referred and traveled less than 5 km (indicating prompt treatment). Of concern, however, is an indication that the fatalities appear to cluster in a few hospitals.

RECOMMENDATIONS

Based upon the findings of this study, and taking into consideration the experience gained in improving the medical care and counseling of postabortion patients in Egypt through the 1994 pilot study, the following recommendations are made:

1. Increase the availability of manual vacuum aspiration instruments in Egypt through: (a) Government procurement and distribution through Ministry of Health and Population channels, and (b) Private sector importation and sale of MVA instruments.
2. Monitor the on-going small scale expansion of the postabortion scaling-up study and interpret the results from that program of operations research in light of the national significance of the postabortion case load that has been indicated by this study.
3. Continue the development of programs that promote linkages between in-patient OB/GYN medical care and Family Planning services, particularly postabortion and post-partum.
4. Physician training programs in Egypt, (e.g., medical school and post-graduate, in-service training programs) need to emphasize the rational use of antibiotics, observation of aseptic protocols, use of low level pain control medication and patient counseling/referral for preventive care services.
5. Conduct of community level studies of abortion activity to identify the determinates of induced abortion, methods used for induction, and the morbidity associated with unsafe and illegal procedures.

6. Improve screening and referral procedures for women who have experienced repeated miscarriages.