EXECUTIVE SUMMARY

1.   Purpose and objectives:

The purpose of this study was to assess the extent of mortality and morbidity among cases admitted with illegally induced abortion in selected hospital facilities and to determine its risk and costs. The specific objectives were: (a) to investigate the morbidity and mortality resulting from abortion within a hospital setting; (b) to characterize cases with morbidity and cases who die as a result of abortion in the hospital setting in order to try to identify risk factors; (c) to estimate the medical and economic resources spent on treatment of abortion complications; and (d) to ascertain sources of information on mortality and morbidity resulting from abortion.

2.   Methodology and implementation:

Data were collected from all cases admitted into selected medical facilities during the study period of one year, with a diagnosis of abortion. The sampled medical facilities included two Medical College Hospitals (MCs), two District Hospitals (DHs) and four Upazila Health Complexes (UHCs), representing the three major types of government hospital facilities and covered all the four administrative divisions of the country. The MCs are the highest tier of hospitals, and serve mostly as referral hospitals, the DHs are situated at a more peripheral level (at district HQs), while UHCs constitute the grass-root level rural centers. Data were collected through a structured questionnaire developed primarily on the basis of WHO core questionnaire. Hospital record excerpts and case interviews were taken for the data collection. The hospital records were excerpted under the guidance of a physician while interviews were conducted by well trained female interviewers, employed particularly for the study purpose. Extensive arrangements for assuring data reliability were undertaken.

A total of 1301 cases were admitted into the selected hospitals during the study period, of whom the questionnaires could be completed for 1262 cases. For the remaining 39 cases, the clinical excerpts were available but interview information could not be collected due to a variety of reasons.

3.   Findings on admission:

Analysis of data available through hospital record excerpts show that the mean duration of gestation of the cases at admission was 13 weeks. Clinically, about nine-tenths of the cases presented with incomplete abortion and with bleeding. Nearly 3 percent of the cases had evidence of mechanical injury

in vagina, cervix, uterus, or intestines, and in nearly one
percent cases evidence of any foreign body was found. About 20
percent of the cases had clinical signs of infection at
admission. Endometritis was the most frequently encountered
infection (14 percent). About 6 percent of the cases presented
with more serious clinical infections, including salpingo-
oophoritis, generalized peritonitis, septicaemia, septicaemic
shock, and tetanus. Except for one percent, all of the cases
presented with temperatures less than or equal to $38^{o}c$. Over
three percent cases had some clinical signs of life threatening
systemic/organ failure at admission.

All abortion cases were re-evaluated based on presence or
absence of certain medical criteria and or interview response,
and categorized as "certainly induced", "probably induced",
"possibly induced", and "pregnancy continued". A small number of
cases where abortion was induced under medical supervision as a
therapeutic measure were classified as "legally induced"
abortions. The rest of the cases was classified as "spontaneous"
abortions.

Nearly half of the abortion cases belonged to the "certainly
induced" category of abortions; 17 percent belonged to "possibly
induced" category and only 0.2 percent were "probably induced"
abortions. Only two percent cases were categorized as "pregnancy
continued" and 0.2 percent cases was "legally induced" abortions.
The remaining one-third cases had "spontaneous abortions".

Three-fifths of the cases did not undergo any surgery within
24 hours of admission. Vacuum suction/curettage was the most
frequently undertaken surgery (41 percent). Major surgery was
undertaken in only 0.4 percent cases.

4. Characteristics of cases:

The mean age of the cases was found to be 25.6 years. Most
of the cases (94 percent) were Muslims. Fifty-two percent were
rural, and the rest were urban residents. As expected, most of
the cases (95 percent) attending UHCs and nearly two-thirds (63
percent) of those attending DHs were from rural areas, while
slightly over-half (55 percent) of those attending MCs were from
urban areas. Except 3.8 percent induced abortion cases, all the
cases were married. Nearly half of the cases were literate. The
proportion having no education was higher among induced abortion
cases than among spontaneous abortion cases. Husbands were more
educated than their wives. Seventy percent of the husbands were
educated. The proportion who were literate was higher among
those attending UHCs than among those attending DHs and MCs.
Most of the cases (85 percent) were housewives. The main
occupations of their husbands included service, trade/business,
agriculture, and day labour.

Fifteen percent of the cases were primigravida. Ninety-six
percent of the cases had living children. The mean number of

living children was 3.4. The mean age of the youngest living child was 3.5 years.

5. Use of contraception:

Forty percent of the cases were ever users of any contraceptives. Ever use of contraceptive was much higher among induced abortion cases (46 percent) than among spontaneous abortion cases (28 percent). Oral pill was the most frequently reported method ever used (29 percent). Fear for side-effects was the most frequently mentioned reason for non-use of contraceptives.

About 15 percent of the cases were unaware of their pregnancies during hospital admission. For about 64 percent of the cases the current pregnancy was unplanned and also unwanted. Three-fifths of the induced abortion cases decided to terminate their pregnancy because they didn't want any more children.

6. Decision making process:

Nearly three-fourths of the cases did not know any abortion/MR service provider or any place where abortion/MR services were available. This proportions were highest among those attending MCs compared to those attending DHs or UHCs, indicating that in the large cities poor and illiterate cases do not have knowledge about the source of abortion/MR services. Among those who knew any place or service provider, the most frequently reported place was the client's house (50 percent), followed by the service provider's house or clinic (39 percent). Insertion of herbs, herbal plants or sticks were the most frequently mentioned methods of induction. On an average, the cases knew 2.5 persons who had an induced abortion during the last one year. One-half of the cases took the decision by themselves to have the abortion, and over one-third reported that their husbands advised them to do so. Two-fifths of the cases reported that they were advised by their husbands to come to the hospital, and another one-third by their relative/neighbor/friend. Doctors also gave advice to 17 percent of the cases.

The mean distance of their home from the hospital to which they were admitted was 12 miles, being least for those attending UHCs (5 miles) and most for those attending MCs (14 miles). In 69 percent of cases, the patients were accompanied to the hospital by their husbands.

7. Pre-hospitalization experiences:

Per vaginal application and oral or parenteral applications were the two most frequently reported modes of termination adopted (33 and 27 percent respectively). Not wanting any more children was the reason mentioned by majority (62 percent) of the

cases for deciding to terminate the pregnancy. Except for three percent cases none returned for a followup visit.

8. Findings on discharge:

Out of 1301 abortion cases, 18 expired during their hospital stay. All these 18 were cases of induced abortion and had presented to the hospital with one or more major complications. The results of a study conducted in the Dhaka Medical College Hospital (DMCH) revealed that in a year from May 1977 to April 1978 there were 12 deaths out of 243 induced abortion cases (4.9 percent) compared to 7 out of 395 (1.8 percent) in 1989 as observed in this study, indicating that there has been a significant decline in the death rate among induced abortion cases admitted into the hospital between the years 1978 and 1989. This might reflect on the easy access to MR services all over the country.

About three-fourths of the cases had undergone some surgical procedure during their hospital stay. Other hospital management included blood transfusion, for two-fifths of the cases, and infusion of plasma expanders, for nearly nine-tenths of the cases.

Four-fifths of the cases had no clinical signs of infection. Risk of fatality was higher for cases admitted with septicaemic shock, generalized peritonitis, and septicaemia. Case fatality was high among those who had their abortions induced by insertion of solid sticks through vagina, D & C, and native medicines.

9. Differentials in service provisions:

The abortion cases who live in urban areas and have relatively higher education for themselves and their husbands tend to consult and seek induced abortion from medical doctors, nurse midwives, family planning workers and pharmacists. In contrast, relatively less educated and rural cases go to traditional healers, village doctors, quacks, and to their husband/relative/neighbor. However, some proportion of both rural and urban cases go to TBAs. Insertion of solid sticks was frequently done by TBAs/quacks and husband/relative/neighbor. Medical and paramedical professionals and family planning workers mostly use vacuum aspiration or menstrual regulation procedure, D & C, and modern medicines for the induction. Pharmacists generally used modern medicines in the form of injection, oral tablets, capsules, etc.

Generalized peritonitis was more common serious infection among those cases where solid sticks were inserted and those who took native medicines, and those who had D & C or MR. 'Very severe' signs of infections like generalized peritonitis and septicaemic shock were found among those cases where evidence of such mechanical injuries as vaginal lesions and uterine

perforations were present. Life threatening conditions like hypovolamic shock were more associated with the presence of uterine perforation, cervical laceration or rupture and intestinal perforation or lesion types of evidence of mechanical injuries.

10. Cost of induced abortion:

Cost of induced abortion in relation to general OB/GYN patients was estimated not in monetary terms rather in terms of utilization of facilities, such as, duration of hospital stay, surgical intervention, blood transfusion, plasma expander infusion, and medication.

The average number of days of hospital stay was 5.0 days for general OB/GYN cases, 3.3 days for spontaneous abortion cases, and 4.6 days for induced abortion cases.

The proportion of induced abortion cases was (8.9 percent) and the duration of stay in the hospitals, bed occupancy by them was similar (8.3 percent). About three-fourths of the cases needed one or the other surgical procedure. Requirement of blood transfusion was much higher among induced abortion cases than among spontaneous abortion cases. On an average, spontaneous abortion cases required 0.5 unit of blood, compared to 0.8 unit for induced abortion cases. Except for 12 percent spontaneous abortion cases and 14 percent induced abortion cases all cases received parenteral fluid. Most of the abortion cases received anti-tetanus toxid routinely. Other medications included antibiotics, analgesia, and drugs related to anesthesia, in case of surgical interventions.

2.5. Data management:

Data management consisted of the following steps:

  i)   registration and documentation;
 ii)   storage of study documents;
iii)   manual editing of questionnaires;
 iv)   computerization of data; and
  v)   analysis of data.

Registration and Documentation: To ensure smooth flow of documents, a documentation cell was organized. The major task for the documentation cell was to register all questionnaires as well as other documents.

Registration of the data recording forms was done following a standard procedure. As soon as the batches were received from a center, these were allocated a batch number written on each questionnaire of that particular batch. A converted number was then assigned to each questionnaire in the batch and the questionnaires organized in batches. A registration book was prepared with appropriate columns to clearly depict document flow.

Storage of Study Documents: The documentation cell was responsible for storage of documents and supplying these for other operations. The storage of documents was done in a systematic procedure so that they could be available at any time without any difficulty.

Manual editing of questionnaires: Detailed instructions for editing and coding was prepared. A code book was also prepared. Editing was designed to ensure that the data contained in the questionnaire were complete, accurate, and consistent. Editing was done to verify that the forms had been correctly completed; that the correct sample had been interviewed, that there were no inconsistencies between the answers; that there was an answer to all questions applicable to the respondent; that all answers were recorded in the form required by the coding instructions; that all questions not applicable did not have any answer; and so forth.

Computerization of data: All data were entered into the computer. Careful validation and revalidation of computer printouts and cleaning of tape was carried out to ensure high quality of data.

Analysis of data: Univariate analysis of the data was done to determine frequency and percentage distribution of all important study variables. Data quality was assured by looking thoroughly into the marginal of all questions and checking internal consistency.

Data analysis was planned to study the distribution of abortion types across the three types of centers. As mentioned already, information were collected in the study on several aspects of abortion and based on WHO criteria, abortion was classified and re-evaluated into several categories. Variables which were considered to be important attributes of the different types of abortion were identified and their distribution across the three types of centers was studied.

Bivariate analysis was also undertaken to examine the relationship between variables attributable to abortion. Such analysis was used to study relationships between different categories of the same variable and the type of abortion. One of the main aims of such analysis was to identify risk factors of abortion, the ultimate objective being to identify the role of different determinants to predict risks of having undergone induced abortion, and complications related to induced abortions.

The analysis also looked into the background characteristics of all abortion cases. The background characteristics were examined with particular attention to identify the relative roles of predictors of different types of abortions, and their relative risks. In addition, the characteristics of cases who presented themselves at admission with moderate or severe morbidity and died during hospital stay was also determined. The difference in characteristics of cases who readily admitted of inducing the abortion compared to those who possibly/probably had induced abortion but denied their effort at the time of interview was also studied.

The proportion of abortion cases among all admitted OB/GYN cases were examined. The case fatality ratio of all abortion related hospital admissions was also determined. The comparative cost of medical and other hospital resources spent on treatment of abortion complications as compared to other OB/GYN services were estimated.

Association between independent and outcome variables were studied through bivariate analysis and relative risks were calculated. Multivariate analysis were performed to look at the relative contribution of different determinant variables.

2.6. Time schedule:

The duration of the study was of two years eight month starting from March, 1988. Clinic-based data were collected for 12 months from August, 1988. The final draft report was submitted to the World Health Organization on December 30, 1990.

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2.7. Completeness of data:

Out of 1301 cases recorded in the study, in 1262 (97.0 percent) cases, information on all sections of the questionnaire were complete (Table 2.4). In 38 cases (2.9 percent), only clinical excerpts were complete and in one case, recruited at a UHC, the clinical excerpt was partially complete, as the case was referred to the DH immediately after admission.

Table 2.4: Distribution of cases by status of Completeness of questionnaire, by center types.

Status of questionnaire	Center Type				
	MC	DH	UHC	All	Percent
Completed questionnaires,	922	229	111	1262	97.0
Incomplete questionnaires (only clinical excerpt completed)	27	7	5	39	3.0
Total admitted patients	949	236	116	1301	100.0

The reasons for incomplete interview information is presented in Table 2.5.

Table 2.5: Distribution of reasons for incomplete interview information, by center types.

Reasons	MC	DH	UHC	All
Interviewer was on leave	66.7	–	–	46.2
Discharged or referred soon after admission	14.8	14.3	80.0	23.1
Very sick at admission and died subsequently	11.1	28.6	–	12.8
Refused to be interviewed	3.7	57.1	–	12.8
Patient absconded after admission	3.7	–	20.0	5.1
Total	100.0	100.0	100.0	100.0
N[1]	27	7	5	39

[1]N is the total number of incomplete interview cases.

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2.8. Reliability of data:

A built-in mechanism for assuring quality of data planned. All hospital admissions and discharge records excerp by the Research Assistants were rechecked by a physician who been trained for medical record checking. This checking was addition to the Contributor who had checked and signed relevant section of the questionnaire before sending those BAPSA.

From the beginning of the study, BAPSA also appointed Quality Control Officers who visited the centers routinel During their visits they also matched hospital/clinic record with the interviewed questionnaire, identified problems, a corrected those on-the-spot.

The Principal Investigator and Co-Investigators of the stud and the Director, BAPSA made site visits to the centers. WH Project Monitor also made a few sample visits. During thes visits, the investigators made on-the-spot verification of th data, consistency checking, and coverage of data excerpts.

Reliability check was done at DMCH center after 8 months o completion of data collection. The sample of 24 admission form were selected out of which 13 could be located in the record room of the DMCH. The information recorded in the questionnaire was compared with the admission forms and were found to be accurate, except slight variation in a few cases in recording of age, one or two drugs prescribed from outside, and date of admission. In one case out of 13, MR done in the past was not recorded in the reproductive history.