REPORT ON

SCIENTIFIC WORKING GROUP MEETING ON
MATERNAL HEALTH IN THE EASTERN MEDITERRANEAN REGION

Geneva, 3 - 7 November 1980
The views expressed in this report do not necessarily reflect the official policy of the World Health Organization.
TABLE OF CONTENTS

I OPENING STATEMENT AND WELCOME BY DR G. RIFKA, ON BEHALF OF
DR A.H. TABA, REGIONAL DIRECTOR, EASTERN MEDITERRANEAN REGION OF WHO 1

II OBJECTIVES 3

III AGENDA 4

IV REPORT OF PROCEEDINGS IN PLENARY SESSION 5

- Needs for Maternity Care 6
- Perinatal Mortality and Morbidity 8
- Statistical and Logistic Problems involved in Studies in Maternal Health 10

CONCLUDING SESSION 12

V RECOMMENDATIONS 14

ANNEX I REPORT OF SUB-GROUP I

ANNEX Ia INTERNATIONAL FEDERATION OF GYNECOLOGY AND OBSTETRICS (FIGO)

ANNEX II REPORT OF SUB-GROUP 2

ANNEX III REPORT OF SUB-GROUP 3

ANNEX IV LIST OF BACKGROUND DOCUMENTS

ANNEX V LIST OF PARTICIPANTS
I OPENING STATEMENT AND WELCOME BY DR G. RIFKA, ON BEHALF OF DR A.H. TABA, REGIONAL DIRECTOR, EASTERN MEDITERRANEAN REGION OF WHO

Ladies and gentlemen, friends and Colleagues, I have pleasure in welcoming you all to a meeting which is for our Region one further action in a long series of efforts in maternal and child health; and yet at the same time is also a new venture for us. Permit me to explain.

Ever since the beginning of WHO in the Eastern Mediterranean Region over thirty years ago, WHO has been endeavouring to improve the standards of maternity care, and through maternity care to improve the health of the newborn child. Our efforts have mostly been in the important field of training. First, and perhaps most important so far, has been our cooperation with governments in the training of nurses and midwives, and of auxiliary or assistant midwives, at country level. Closely connected with this since 1970 has been a modest intercountry training programme for midwifery tutors and administrators. Secondly, WHO's general collaboration in the development of medical schools and our fellowship programme have been elements helpful in assuring at least some availability of specialist obstetric care. Thirdly, we have in the 1970s had several meetings to discuss the training of the traditional birth attendants who provide the only experienced assistance at the majority of deliveries in our Region.

Recently, however, we have come to believe that it is necessary to undertake, in a more systematic way, further collaboration with the countries in the improvement of maternity care. However, as soon as we face the task of systematic planning in this subject, whether we are thinking in terms of a WHO regional programme of activities or when we are working with a country in planning its national health programme, we encounter a major obstacle. We do not know the facts of the matter, hardly at all. How can we plan? How could we evaluate the results of action without knowing the facts? We know for example that maternal mortality rates range all the way from rates similar to those in Europe in one or two countries of our Region, up to rates that are much higher in the remaining countries, even as high as 8 per thousand live births in some areas. But we know little more than that there is this
wide range. Just what is the extent, and equally important, the main preventable causes of maternal mortality in any particular country is mostly unknown.

As with mortality and morbidity, so it is with the availability of maternal care. While such figures as number of obstetric and gynaecological beds or number of practising midwives per 100 000 population could, with an effort, be collected, they have not been gathered and analysed so far. Moreover, what are the most useful indices of maternity care in our Region? Indeed, what in our Region are the most essential elements of maternity care? We have a major task of definition and measurement of needs before us, which must be undertaken if the countries are to devise various strategies to meet those needs, and evaluate the effects of implementing those strategies.

Lastly, we come to the other hoped-for outcome of pregnancy besides a healthy mother, namely a healthy child. As the countries gradually gain some victories, some progress, in the struggle against malnutrition and infectious diseases in late infancy and early pre-school life, so perinatal morbidity and mortality and low birth weight gradually assume an increasing relative importance. However, one views with considerable scepticism the rapid growth in many of our countries of the speciality of clinical neonatology and the proliferation of neonatal intensive care units. Not only is their sophisticated equipment very difficult to maintain in working order in developing countries, but even if very efficient they could serve only a tiny fraction of those in need. Thus our third task at this meeting relates to the need to understand much more about the nature and magnitude of perinatal health problems and their antecedents, and to define risk factors of predictive value.

With the assistance of the United Nations Fund for Population Activities and of the WHO staff in Geneva, we in EMRO have been able to allocate some modest, but I hope adequate, funds for the tasks which I have outlined. These funds will cover some small research grants to institutions, one or two meetings, and some consultant visits utilizing experts from inside and from outside the Region as necessary, and including, we hope, a cooperation with the International Federation of Gynaecology and Obstetrics. This meeting will, I hope, set the renewed maternal health programme of EMRO on a good course. If it does this successfully, the meeting will be a real milestone in the achievement of the health goals of the Member States of WHO in our Region.

I thank you all for your presence and participation and I wish you success in your efforts.
II OBJECTIVES

The principal objective of the Meeting is to draft the protocols for investigations into the three sub-topics (see Agenda items 2.1, 2.2, and 2.3). These protocols should be as detailed as they can be without actually being drafted in the individual countries concerned (this necessary adaptation of the protocols in their final form will take place in the countries, with the help of Short-term Consultants if required).

The secondary objective is to come to some understanding as to what institutions, preferably from amongst those represented at the Meeting, will undertake the studies, and what outside assistance, technical and financial, it may require.
III AGENDA

1. Opening
   1.1 Objectives of the Meeting: explanation and discussion
   1.2 Arrangement of working sessions
   1.3 Election of chairpersons and rapporteurs

2. Plenary Sessions
   Review of the present situation in general and with special reference to countries of the Eastern Mediterranean Region, in respect of:
   2.1 Extent and causes of maternal mortality and morbidity.
   2.2 The availability of maternity care. Definition and measurement of needs; formulation and evaluation of strategies.
   2.3 Extent and causes of perinatal mortality and morbidity. Distribution of birth weight.

3. Statistical and logistic problems likely to be encountered in community surveys in these subject areas.

4. Sub-group meetings for the drafting of protocols of surveys and investigations:
   (a) Maternal mortality and morbidity
   (b) Definition and measurement of needs for maternity care
   (c) Perinatal mortality and morbidity and birth weight distribution

5. Conclusions (Plenary Session)
   5.1 Discussion of the proposed protocols: the use of common population samples
   5.2 Summary of the proposed arrangements for the WHO EMR maternal health studies, 1981-1982, and recommendations

6. Closing of the Meeting
An address of welcome to the delegates on behalf of Dr A.H. Taba was made by Dr Rifka, in which he emphasized that WHO for many years has been endeavouring to improve the standards of maternity care and through maternity care to improve the health of the newborn child, and outlined several steps that have been taken in that direction. The unavailability of quantitative information regarding maternal and perinatal mortality had now become a real obstacle to future planning. Some funds have been allocated to carry out action-oriented studies on these problems.

The objectives of the Scientific Working Group meeting were:
- to draft the protocols for investigations into the three sub-topics. These protocols should be as detailed as they can be without actually being drafted in the individual countries concerned;
- to come to some understanding as to which institutions will undertake the studies, and what outside assistance, technical and financial, may be required.

The interdependence of the three sections, i.e.
(a) Maternal mortality
(b) Maternity care
(c) Perinatal mortality

was emphasized by several speakers. The Agenda was then adopted with the amendment that only one day would be devoted to sub-group discussions, so that research proposals could be more thoroughly discussed in plenary session.

Election of Chairman and Rapporteur

Dr M.F. Fathalla was elected chairman and Dr Samia Janjua rapporteur.

Maternal Mortality and Morbidity

A paper was presented by Dr T.A. Chowdhry of Bangladesh on the levels and trends of maternal mortality on a global basis. There was no doubt that the level of maternal mortality in developing countries, often between 100 and 600 per 100,000 live births, was appallingly high, compared with the corresponding figure for the industrialized world, usually between 5 and 20 per 100,000 live births. Considering the grief and deprivation consequent upon the loss of a wife and mother, the reduction
of this fivefold to a hundredfold difference must be a major health target for the world.

Dr Fathalla presented a paper reviewing studies of maternal mortality in the Eastern Mediterranean Region, noting how very few in number such studies were.

Dr Trussel spoke of maternal mortality and morbidity under five headings suggested by Dr Berkely at a recent meeting at the Royal College of Obstetricians and Gynaecologists in London, viz.

Biological; social; health of community; quality of medical care; and the environment.

He discussed the relevance of the "non-institutional" determinants in any consideration of epidemiology, but emphasized as well the peculiar hazard of the moment of delivery to two lives and the need to cater for this as well as to lay a sound background of care.

Participants from the Sudan commented on the high incidence of infective hepatitis as a cause of maternal mortality in that country. Some data on maternal mortality in major city hospitals of Pakistan, 1975, 1977, 1979 were presented by Dr Janjua. It was noted that we should be concerned with maternal morbidity and maternal depletions also, but data on these problems were just as scarce in our Region as on maternal mortality.

Needs for Maternity Care. Definition and Measurement, Strategies for Meeting these Needs

For improving maternity care, both immediate and long-term plans were needed, immediate for single factors such as ruptured uterus and long-term plans for multiple complex factors. A maternity hospital should have satellite centres, and there should be suitable criteria for selecting the high risk cases. A high risk patient should continue to be under supervision during the post-partum period. Mortality and morbidity review meetings were considered invaluable in improving service and reducing morbidity and mortality. Suitable and accurate data collection helps in improving the service and identifying the risk factors, it was stressed.

The health manpower situation in the Region for different levels of care was reviewed. Generally, it was noted, there is an insufficiency and maldistribution of health personnel, particularly of middle level and community level trained health workers.
The health manpower concerned falls into the following categories:

1. Physician
2. Nurse-midwife with mainly supervisory administrative role
3. Midwife responsible for private clinics
4. Practical midwife, who is the back-bone of the programme, and also has some supervisory and administrative responsibility
5. Primary health care team which includes the midwife
6. Traditional birth attendant (TBA). Attempts to replace her have failed to overcome three barriers; geographical, cost and cultural.

The role of the village midwife in Sudan was discussed. She was considered the back-bone of antenatal care. Mention was made in the review of the MCH teacher training programme in the Sudan which has resulted in changes in curriculum, but this approach was difficult to implement speedily in view of the large numbers of nursing and midwifery schools.

The problem of TBAs working illegally was stressed by several participants. Even in Egypt 80% of the deliveries in some areas were conducted by TBAs, and so it would be more realistic to train them adequately in pre-natal, natal and post-natal care, as well as in newborn care. In Sudan, only 5% of all deliveries were institutional. The concept of family health had to be strengthened and there should be more coordination between TBA, Lady Health Visitor or Nurse/Midwife, General Practitioner and the specialist. The enormous variation in the availability of resources and in practices in the Region was stressed.

The TBA was also referred to as the most accessible and widely distributed health resource in some areas and could be used as the distal link in a chain linking the woman to an integrated system of care. The TBA could be trained in practical nutrition, identification of anaemia, oral rehydration, supporting breast-feeding, and birth spacing.
Other items could be added depending on the situation.

The training of the TBA in these skills would also depend on the level of health services and referral services available. The training should preferably be carried out in MCH Centres rather than the Maternity Hospitals, where there was a preponderance of high risk and complicated cases.

Most of the participants hoped that gradually as the level of general development as well as the development of health manpower improves, the TBA's role would eventually disappear, at least as an attendant at birth, although her other important role as a domestic helper at this particular time of need might persist much longer with benefit to all.

The mother herself is not a mere passive recipient of care. She is the primary health provider both for herself and for the family. Hence her level of knowledge and understanding is vital.

The importance of adequate training of the staff to identify the high risk patient who needs referral was emphasized. A plea was made for full integration between hospitals and the rural areas. The obstetric service of the hospital must assume some degree of responsibility for maternity care in all the areas it is intended to serve.

**Perinatal Mortality and Morbidity: Low Birth Weight**

Dr. Franz Rosa introduced the subject of perinatal mortality and morbidity. He mentioned that we still do not know enough about the cause of prematurity, most congenital malformations, and toxemia of pregnancy. We know more about foetal undernutrition, infections and birth injuries. Perinatal mortality from prematurity and malformations has been refractory to public health measures. Intensive care of the newborn has lessened mortality but it is very expensive, and may not have much lasting benefit after the infant returns to the family, especially if breastfeeding has been interrupted.

Because the low birth weight which is prevalent in some less developed countries is due to a relatively large component of foetal undernutrition rather than relatively high prematurity rates, the low birth weight infant tends to be more mature for the same weight than the low birth weight baby in developed countries, where the main factor is true prematurity.
Dr Rosa also described "the other perinatal casualty" which is the previously born infant whose breast-feeding is interrupted by pregnancy, leading to protein energy malnutrition.

Other participants presented data from a perinatal study in Karachi (1975) and reviewed five years' data on stillbirths from Islamabad. The role of pre-natal care, adequate training of TBAs and identification of high risk pregnancies was emphasized.

Several speakers emphasized the close relationship of the three parts of the agenda, i.e. maternity care, maternal morbidity and mortality, and perinatal mortality, and stressed the fact that improvement in the first would lead to improvement in the second and the third.

Two studies from outside the Eastern Mediterranean Region were presented briefly as relevant examples. The problem of low birth weight as a cause of perinatal mortality was high-lighted from a study in New Delhi in which 32% of infants weighed 2 500 gms or less and about 8% weighed 2 000 gms or less. 87.3% of babies between 2 000 and 2 500 gms birth weight were full-term babies. Overall perinatal mortality was 75/1000. The first significant drop in survival rates however occurred at 2 000 gms, mortality below that weight being very high indeed. Contributory factors were primiparity, and parity 5 and above, toxaemia, APh and breech presentation. It was felt that overall improvement in birth weight would certainly be accompanied by reduction in perinatal mortality.

In a community study of a birth cohort in New Delhi in 100 000 population, where all social classes were represented, 23% of babies weighed less than 2 500 gms, and 2.7% were less than 2 000 gms. The low birth weight babies had a higher mortality rate not only during the neonatal period but also in the period 1 month to 1 year of age. The results underlined the importance of studies in the community rather than in the hospitals, even though the latter were easier to carry out.

Several participants highlighted the high perinatal mortality in the primiparae and in high parity pregnancies.

A WHO Family Health Statistical Report was presented (WHO Statistical Quarterly Vol. 33, No.3, 1980). The data from the Eastern Mediterranean Region were rather scarce, it was pointed out; WHO current plans for more detailed study of birth
weight using a multifactoral cross-sectional retrospective survey were mentioned. Maternal nutrition, as measured by maternal weight gain as a factor in low birth weight babies was mentioned. There was evidence that nutritional impact may even be felt in early pregnancy. The "Gravidagram" method of measuring intrauterine growth was mentioned as well as the action-oriented record card for antenatal screening.

The high risk approach was elaborated, taking account of such factors as age, parity, maternal status, nutritional state, medical disorders, reproductive history, current obstetric factors, etc., as well as identification of high risk during labour. High risk status should be ideally identified before pregnancy however, in order to prevent pregnancy in a state of high risk. A post-partum approach can be used for this. In this regard the group was reminded to keep in mind the "other perinatal casualty", the infant displaced from breast by the intervening pregnancy.

The anomaly of a larger number of antenatal visits and delivery by specialists accompanying a higher perinatal mortality rate was mentioned. The reason was that all these were high risk pregnancies, in whom the perinatal mortality rate would presumably have been even higher but for the high level of care given.

High risk identification using a score method was mentioned, such as that developed by Gordon Perkin, for example.

Statistical and Logistic Problems involved in Studies in Maternal Health

Community surveys were not the only source of data, it was pointed out. We should also exploit such potential sources as records and reports of service, and the World Fertility Survey (with reference to contraceptive use; reproductive health; infant mortality; and breast-feeding).

The aim should be to get information with minimum cost and delay. We need to consider whether a full community survey is always necessary.

Information on the circumstances surrounding a small number of deaths may give adequate information, rather than aiming at accuracy of numbers when maternal mortality is very high anyway.
Village studies of a few cases with help from husbands, friends or TBAs, could decide the common causes of death. When Primary Health Care services are more widely established, information will be more accessible. Accurate completion of records by a medical officer can be a most important source of data.

The number of pregnancies in a country can be calculated from the birth rate, and from this the necessary services for antenatal care, delivery, immunization, etc. can be calculated.

Organization of surveys and evaluations should be discussed at a local as well as a national level. Whatever surveys are devised should be pre-tested.

Analysis should be simple. Two-way tables well presented are usually more than adequate.

Over-reliance on the computer is a common cause of failure.

There was considerable discussion on the relative merit of various kinds of investigations. It was felt that retrospective maternal mortality surveys could give very useful data, and that it was possible to carry out the Confidential Enquiry everywhere in the Region. It was pointed out that the Executive Board of FIGO* would be happy to collaborate with WHO.

The objectives and arrangements of the three sub-groups were discussed. Each sub-group would deal with one of the three sub-topics.
- Maternal Mortality and Morbidity.
- Definition and Measurement of Needs for Maternity Care, (and this sub group should also address the logical next step in this subject area, the formulation and evaluation of strategies to meet these needs).
- Perinatal Mortality and Morbidity, and the problem of low birth weight.

Each sub-group was to prepare and present for discussion general protocols or research proposals in its assigned subject.

The report of each sub-group, after suggestions in plenary session discussions had been taken into account, would form the basis on which WHO/UNFPA would be willing to co-sponsor studies with governments and suitable organizations/institutions in member countries of WHO in Eastern Mediterranean Region. (These reports are appended as Annexes I, II and III).

Purposes of the Maternal Health Research Programme

Finally, the sub-groups were to bear in mind, in drawing up the research proposals, the purpose of the research programme in maternal health.

Three main purposes were defined:

(a) Improvement of the quality of maternity care. The research should be so planned and its results so presented and discussed that they could confidently be expected to guide and influence to a marked degree the selection of priorities, choice of methods and techniques, and the actual conduct of maternity care programmes in the near future.

(b) The results of the studies should influence and even enter into the content of training in obstetrics, midwifery and maternity care in general at various levels from TBA to specialist obstetrician.

(c) Finally the research programme has an "advocacy" purpose. If the programme helps to make it possible to present to policy-makers the facts about the extent and the reasons for maternal and perinatal mortality and morbidity, and about the extent and the nature of unmet needs for maternity care, and if this presentation of the facts is then made confidently to appropriate audiences, the result will be a higher priority for maternal health programmes. Objective examination of the facts also would underline the cardinal importance of family planning in the improvement of maternal health and the reduction of maternal and perinatal mortality. Appropriate audiences would include regional or sub-regional meetings of Ministers of Health, such as for example the WHO Regional Committee, which each year discusses in depth one technical subject specially selected.

CONCLUDING SESSION

Institutional arrangements for carrying out the studies

Suggestions were invited as to who should undertake these studies, and whom should WHO approach regarding this. The situation differs in different countries of the Region. In Egypt, the National Academy of Sciences could be contacted,
or even the consultant directly, who can inform the Ministry of Health. In other countries, Universities, Medical Colleges and in some the Ministries of Health will have to be addressed directly. Sudan has a Research Task Force, which can be approached.

In Pakistan, a National Seminar on Maternal Mortality may be a suitable occasion for discussing these studies.

Personal contact was essential for pursuing these problems, it was felt.

Finally, Dr Rifka addressed the concluding session and thanked the participants, on behalf of the Regional Director, for their contribution. He was impressed with the interest of all present to follow up the recommendations (see following page), and he had high hopes that this meeting would prove to have been an important landmark on the road to improved health and safer delivery for the mothers of our Region.
V RECOMMENDATIONS

1. A system of Confidential Enquiries into Maternal Deaths has in many industrialized countries been a cornerstone of improvement of maternity care services, and is now being adopted in developing countries. All countries in this Region should establish by 1985 at the latest a system of Confidential Enquiries into Maternal Deaths such as is described in this report.

2. All countries should begin also some other service-oriented research in maternal health such as is described in Annexes II and III, the choice of subject and method depending on the particular circumstances. Such research, when of a direct and practical nature, can also contribute considerably to the survival in better health of mothers and infants.

3. WHO in this Region in the remainder of the period of its Sixth General Programme of Work and for the duration of its Seventh (1984-89) should endeavour to give particular emphasis to technical support in research and training to all countries with high maternal and perinatal mortality rates. UNFPA's present and potential contribution to this special programme or emphasis is warmly welcomed, and because the link between population questions, family planning and maternal and infant health is so obvious, it is recommended that UNFPA's support in this direction at country and inter-country levels be continued and strengthened in the above period.

4. Meetings of the Regional Scientific Working Group on Maternal Health should be convened at intervals of two or three years in order to review research in progress, the results obtained and the implications of this research for improvement of services.

5. Studies evaluating maternity care and studies on pregnancy outcome are very suitable to be carried out in Field Training Programmes, as they have much potential educational value for the students being trained, provided they can participate in analysis and discussion of results as well as data collection.

6. Besides the regular meetings of the national committees for the Confidential Enquiries on Maternal Deaths and the regular meetings of Obstetric and Gynaecological Societies and Societies of Midwives, where such exist, national
or provincial multi-disciplinary meetings, involving obstetricians, midwives, paediatricians, public health physicians and nurses and others, can be useful in focussing attention on areas where new or intensified preventive efforts are required. These meetings are particularly recommended in order to consider the implications of the country's own data on maternal health and maternity care services.

7. Much needs to be done to focus public and political concern on maternal health. For example, an "International Year of Motherhood" would certainly help to publicize the unmet needs in maternal health. However, with or without such an international year, governments are recommended to hold special events such as a "National Day of Motherhood", or "National Childbirth Week" or similar consciousness-raising projects. (Perhaps their timing could be connected with a suitable event in the religious calendar, e.g. the Birthday of the Prophet).

8. Consideration should be given to making Maternal Health the subject of the Eastern Mediterranean Regional Committee of WHO in two or three years time, and these Technical Discussions should be preceded by national or sub-regional meetings on the subject covering all Member States.
ANNEX I

REPORT OF SUB-GROUP I

Maternal Mortality and Morbidity

Chairman Dr Trussel
Rapporteur Dr Fathalla

Definitions

The group elected to use the definition of maternal deaths to be found in the International Classification of Diseases.

Maternal Death

A maternal death is defined as the death of a woman while pregnant or within 42 days (6 weeks) of termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to, or aggravated by, the pregnancy or its management, but not from accidental or incidental causes.

Maternal deaths should be subdivided into two groups:

1. Direct obstetrical death

Those resulting from obstetrical complications of the pregnant state (pregnancy, labour and the puerperium) from intervention, omissions, incorrect treatment or a chain of events resulting from any of the above.

2. Indirect obstetrical death

Those resulting from previous existing diseases that develop during pregnancy and which are not due to direct obstetrical causes, but which are aggravated by physiological effects of pregnancy.

The denominator should be live births. Nothing else is practical. Whether rates are expressed per 100 000 per 10 000 or per 1 000 is not important, provided the figure is clearly expressed. It was decided that number per 10 000 would actually be the most appropriate for the majority of countries in the Region, taking into account the range of maternal mortality rates and the size of populations.
The number of deaths should include abortions and ectopic gestations. The FIGO definition of: preventable; probably not preventable; and unexplained maternal deaths was also accepted.

Confidential Enquiries into Maternal Deaths

The group decided that the most profitable method of accumulating data was by a programme of "confidential enquiries", and that these should be initiated as soon as possible.

The following administrative outline was suggested:

- Central Committee (Obstetricians) making final assessment
- Ministry of Health periodic, e.g. annual reports making final assessment with recommendations
- sends after removing names, collating information, making assessment via Provincial or Governorate Director of Health
- Provincial or Regional Assessor (Obstetrician)issuing directives & guidance send the information (completed form)
- Hospitals, Health units, Physicians comments, assessment, recommendations, via Provincial or Regional Assessor
- District units, e.g. Medical Assistants, midwives, LHVs
- send the information (completed form)
The first step was a Government directive to provincial or regional health director that an enquiry must be initiated whenever a maternal death was reported.

The director would require on each such occasion the completion of a confidential enquiry form, which would be forwarded to a Regional or Provincial assessor who in the light of his experience would make an assessment of the circumstances, including the avoidability or otherwise of the death, and the measures that could usefully be introduced to prevent repetition and improve maternity care. A copy of his comments would go to the physician concerned with management of the case, requesting his comments in return, or further information if necessary.

The assessors would meet to standardize their reporting once a year.

A final Central committee of a small (2-3) number of very experienced obstetricians would consider all assessments and report from time to time to Government, making recommendations on policy and on the improvement of the service in the light of the conclusions arising from the enquiries.

The report to Government would be confidential, and individuals and hospitals would not be identified. The Regional or Provincial Assessor removes all names or other identifying matter, and so is the only person besides the staff at the hospital or health unit who knows both the circumstances and the identity of patients and the hospital or health unit concerned.

The final committee might with advantage be designated a "research" or "scientific" committee to ensure that it was clear that it was not a purely Government organization seeking to apportion blame.

The necessary information

The group considered that the FIGO Confidential Enquiry form was suitable with some minor modifications. A copy of the form is attached as Annex Ia.

The following additions are recommended:

1. Space should be available for comments of an epidemiological nature e.g. income, education, availability of home grown foods, local circumstances or traditional practices etc.
2. In developing countries it will often be necessary to supplement information by enquiring from family members and TBAs etc., and reference to these should be made in the form.

This form has been tested over many years - but its use must be pre-tested locally.

A preliminary meeting would be necessary in each country, to review the necessary steps to ensure the collaboration of everyone involved. An initial period would necessarily be a trial, and would be subject to review and modification. Consultant help would be available from WHO.

Discussion with legal advisers is recommended if knowledge of a criminal act (e.g. abortion) comes to light as a result of an enquiry which was essentially "confidential", and if it seems to present an unavoidable problem. Guidelines for doctors would be valuable.

**Notification**

Notification of maternal deaths should be encouraged from as wide a source as possible. Anyone working in the community would be suitable. The satisfactory completion of the enquiry, however, will depend on an active interested, dedicated individual. The group felt that what was wanted was not merely the passive acceptance of information but the active investigation of cause, needing a home visit and consideration of the whole background of the death. The collaboration of professional organizations of obstetricians should be enlisted, likewise that of midwives wherever such exists.

**Budget**

It was anticipated that this would not be very expensive. Needs would fall under three heads:

(a) Modest remuneration (honorarium) for completed information from workers otherwise employed.

(b) Local travel (e.g. within area for investigation, and of provincial assessors to meetings).

(c) Secretarial assistance.

The scheme was completely dependent on active vigilance at all levels. Government support of (but not direct involvement in) the programme was required. It was
The first step was a Government directive to provincial or regional health director that an enquiry must be initiated whenever a maternal death was reported.

The director would require on each such occasion the completion of a confidential enquiry form, which would be forwarded to a Regional or Provincial assessor who in the light of his experience would make an assessment of the circumstances, including the avoidability or otherwise of the death, and the measures that could usefully be introduced to prevent repetition and improve maternity care. A copy of his comments would go to the physician concerned with management of the case, requesting his comments in return, or further information if necessary.

The assessors would meet to standardize their reporting once a year.

A final Central committee of a small (2-3) number of very experienced obstetricians would consider all assessments and report from time to time to Government, making recommendations on policy and on the improvement of the service in the light of the conclusions arising from the enquiries.

The report to Government would be confidential, and individuals and hospitals would not be identified. The Regional or Provincial Assessor removes all names or other identifying matter, and so is the only person besides the staff at the hospital or health unit who knows both the circumstances and the identity of patients and the hospital or health unit concerned.

The final committee might with advantage be designated a "research" or "scientific" committee to ensure that it was clear that it was not a purely Government organization seeking to apportion blame.

The necessary information

The group considered that the FIGO Confidential Enquiry form was suitable with some minor modifications. A copy of the form is attached as Annex Ia.

The following additions are recommended:

1. Space should be available for comments of an epidemiological nature e.g. income, education, availability of home grown foods, local circumstances or traditional practices etc.
2. In developing countries it will often be necessary to supplement information by enquiring from family members and TBAs etc., and reference to these should be made in the form.

This form has been tested over many years - but its use must be pre-tested locally. A preliminary meeting would be necessary in each country, to review the necessary steps to ensure the collaboration of everyone involved. An initial period would necessarily be a trial, and would be subject to review and modification. Consultant help would be available from WHO.

Discussion with legal advisers is recommended if knowledge of a criminal act (e.g. abortion) comes to light as a result of an enquiry which was essentially "confidential", and if it seems to present an unavoidable problem. Guidelines for doctors would be valuable.

Notification

Notification of maternal deaths should be encouraged from as wide a source as possible. Anyone working in the community would be suitable. The satisfactory completion of the enquiry, however, will depend on an active interested, dedicated individual. The group felt that what was wanted was not merely the passive acceptance of information but the active investigation of cause, needing a home visit and consideration of the whole background of the death. The collaboration of professional organizations of obstetricians should be enlisted, likewise that of midwives wherever such exists.

Budget

It was anticipated that this would not be very expensive. Needs would fall under three heads:

(a) Modest remuneration (honorarium) for completed information from workers otherwise employed.
(b) Local travel (e.g. within area for investigation, and of provincial assessors to meetings).
(c) Secretarial assistance.

The scheme was completely dependent on active vigilance at all levels. Government support of (but not direct involvement in) the programme was required. It was
recommended that the programme should be initiated by a recommendation from WHO to Governments, with the suggestion that a consultant visit should be made.

3. Four months later to assess difficulties and progress.

It should be pointed out that the exercise was to provide information on which improvement of the maternity service could be based and not to apportion blame. No one would be named in the report.

The Confidential Enquiry would not provide information on maternal morbidity which did not result in death. Important complications of pregnancy, delivery and the puerperium not necessarily resulting in maternal death will include:

- Abortions, including hydatidiform mole.
- Ectopic gestation.
- Hypertension, pre-eclampsia and eclampsia.
- Sexually transmitted disease.
- Medical disease including diabetes, tuberculosis.
- Complications of delivery including difficult and prolonged labours (the unwise use of oxytocic drugs).
- Obstetrical trauma including fistulae.
- Problems of the puerperium including pyrexia, psychosis, and lactation failure.
- Anaemia, maternal depletion.

OTHER KINDS OF INVESTIGATIONS

Although the group made the institution of a confidential enquiry its first priority, nevertheless, in view of the wide diversity of countries in the Region, it was felt that both retrospective and prospective surveys would be of value in specific circumstances, and would provide information not available in any other way. These studies could usefully be combined with investigation into maternity services and perinatal mortality and morbidity and birth weight.

RETROSPECTIVE STUDIES

These were felt to be of value in selective areas both at the hospital level if reliable data were available and at the community level as part of larger enquiries.
The suggestion was made that bereaved husbands could be a good source of information on number of women dying at the time of childbirth, i.e. asking large numbers of men whether they had lost a wife in childbirth, and when, and a few other simple questions.

**PROSPECTIVE STUDIES**

(a) **Maternal Morbidity**

Information on Maternal Morbidity was lacking in all countries. Although by inference, studies on mortality would throw much light on the general pattern of morbidity, nevertheless, any other study which would improve the extent of this knowledge should be pursued. These studies could be small and selective, perhaps taking in different areas, or the same area at different times, or could be part of a larger country-wide survey.

(b) **Maternal Mortality**

This too could usefully be superimposed on an existing survey. There were no community-based prospectives for retrospective studies of maternal mortality in the Eastern Mediterranean Region, as for example there were in the South East Asia Region.

**Design**

For the design of a prospective study:

- Population sample size recommended 250,000; this would give information on 9,000 - 12,000 births each year.
- The area should be one with a stable population.
- It should be as representative of the country as possible.
- The area must have had a complete census.

The methodology would have to involve a house-to-house survey. It could be economically associated with a similar enquiry into maternity care and perinatal mortality. The problems anticipated which were particularly applicable to maternal mortality and morbidity would be:

- the small number of maternal deaths expected each year in a population of 250,000, between six and sixty in most of the Region.
it would not necessarily be representative of the national picture;
there would be an inevitable bias resulting from the programme itself; and
it would be too expensive unless combined with other programmes.

(c) Information on Gynaecological Problems of Women in their Reproductive Years

Attention was drawn to the dearth of information of the gynaecological problems faced by women aged over 30 who were often reluctant to seek advice even when this was available.

Many of these gynaecological problems were the legacy of inadequate maternity care, some were caused by disease particularly affecting this age group, and others may well be the result of traditional procedures such as "pharaonic circumcision" or infibulation. (With regard to the latter, two studies were at present under way in Somalia and Sudan but these were studies of prevalence and attitudes, not epidemiological with regard to health consequences).

PLENARY DISCUSSIONS

The international classification of disease definitions was accepted by all the participants. Clarification was sought of the terms "accidental" and "incidental" death. It was explained as examples that if a pregnant woman has an accident and dies, this is accidental death; while if a pregnant woman has a malignant disease e.g. tumour of the brain, and dies, this is incidental death.

Several participants expressed anxiety lest health personnel in some countries might be afraid that Government would interfere and prosecute persons as a result of a confidential enquiry. It was explained that the design as proposed by the Group had Government involvement only at two points. First, in issuing the directive for cooperation and submission of information; second in having a feedback in the form of an amalgamated (national) report and recommendations from the Central Committee which help in improving the health services. In the report made to Government there will be no names of any hospital obstetrician, or of any medical officer or any other health personnel or TBA involved in the case, nor identifying details about the deceased. The information given to the Regional or Provincial assessor will be completely confidential. There was some discussion as to the appropriate translation
into Arabic of the term "confidential enquiry". Of the two meanings of the phrase "in confidence", it was the aspect of trust which needed bringing out, not the aspect of secrecy. The translation must not mean "secret report" which can have very bad undertones. It was felt that "takrir thika" which means "report given in trust" was the most suitable phrase.

There was no time limit for this enquiry which was an effort for the improvement in maternity service and will continue for many, many years as an integral part of the service. Several advantages of the programme were highlighted such as:

- It will be an educational process for all involved if a systematic approach is made.
- The regional assessor will discuss the deaths with the hospital and health staff involved and this in itself should improve the future standard of work.
- The Central Committee will make recommendations to the Government on the basis of the report. This too might lead to improvement in the maternity services.
- Some governments may not hesitate to publish the reports made to them by the Central Committee, or give them at least a wide circulation within the health service and the medical and midwifery schools. This will have a major educative value.

Questions were raised regarding funding. Dr Cook replied that additional funds would be available for prospective community study when some projects were already ongoing, such as fertility survey, malaria survey etc. If no project was ongoing, WHO might be willing to initiate with "seed money" such projects where maternal mortality, maternal care and perinatal mortality can be combined, with a view to making a request to UNFPA for support as a country project.

Several participants highlighted the need for a prospective study on maternal morbidity, as very little information was available regarding this.

There was a great deal of discussion on the merits and demerits of a prospective and a retrospective study. All the types of study discussed by this group and especially the confidential enquiry were felt to have value over and above the precise aim of the study, e.g. they involved:

- An element of training which should be exploited whenever possible;
- a feedback to possible modification of training programmes and of curricula; and
- a strengthening of capability for research and data collection by those taking part.

Final recommendations were as follows:

1. The first priority is Confidential Enquiry into Maternal Deaths, and it was felt that every country in the Eastern Mediterranean Region, no matter what the rate of development of its health services, could at least begin such a system, which WHO joins FIGO in recommending strongly.

2. In view of the diversity of the situation in different countries in the Region, other studies may be possible and appropriate: i.e.

   (a) Prospective morbidity study
       (i) general
       (ii) selective

   (b) Retrospective study of maternal mortality.

   (c) Prospective study of maternal mortality.

   (d) Epidemiology of gynaecological conditions.
INTERNATIONAL FEDERATION OF GYNECOLOGY AND OBSTETRICS (FIGO)

Notes on compiling the Confidential Report on death due to, or associated with, Pregnancy, Childbirth or Abortion

All deaths within 42 days of pregnancy or delivery should be reported. The information given in this report is confidential and will be analysed only by Medical Officers. It should not be published in any form which could be identified with a particular case. Strict confidentiality as to names of all individuals concerned should be preserved.

The information will first be collected by the Medical Officer of Health (or equivalent) and a local consultant obstetrician. It is hoped that this will be done as far as possible by personal contact with those concerned. Names need not be given, but status of attendants should be specified.

These reports should help towards the improvement of the Maternity Service, but they will only do this if the comments they embody are candidly expressed.

It is appreciated that no questionnaire can cover the details of every type of case. The Assessors value the fullest possible reports and welcome additional typewritten sheets of narrative, as well as correspondence relating to the deaths.

Detailed reports on antenatal care are often of great value, even if this does not appear to be causally related to the death.

The Medical Officer of Health is particularly requested for information on the patient's social conditions. Racial characteristics, where known, should be included.

In deaths from Abortion, evidence should be given as to the type of abortion, spontaneous or induced, and if induced, whether legal or illegal and the reasons for the former. Social class, race and housing conditions may be of importance in these cases. The method of inducing abortion and the time when complications were observed should be stated.

In deaths from Sepsis, whether following abortion or delivery or following operative procedures, full details should be given of the probable origin of the
infection, with the induction-delivery interval if applicable, and all bacteriological reports and antibiotics given, whether prophylactic or therapeutic; also the time of operative procedures such as evacuation of retained products or laparotomy.

In deaths from Haemorrhage, predisposing factors such as anaemia and its treatment should be given. The time elapsing between the onset of bleeding, operative procedure, and the speed with which blood was available for transfusion are factors which should be stated, together with the length of time the patient survived, following onset of the major haemorrhage.

In deaths from Toxaemia, details of previous obstetric history and antenatal care during present pregnancy are obviously important. The exact indications for admission to hospital and the indications for operative procedures should be given. In patients with pre-existing hypertensive disease, evidence of causative conditions such as coarctation of the aorta, renal artery stenosis, chronic pyelonephritis or phaeochromocytoma should be sought.

Anaesthetics and Analgesics

Where these were administered, details should be given. It would be helpful to know what equipment was available in the room in which delivery took place, i.e. anaesthetic apparatus, suction and facilities for respiration.
FIGO NOTES ON THE
CONFIDENTIAL REPORT ON DEATH DUE TO,
OR ASSOCIATED WITH, PREGNANCY, CHILDBIRTH OR ABORTION

Name of deceased:  Surname: ..........  Forename: ...........
Age of deceased: .......  Married: □  Single: □
Occupation of the patient: ...............  Divorced □  Widowed □
Occupation of husband: ..................  Separated □
Address where death took place: ........................................
...................................................................................
...................................................................................
(Indicate if hospital or home of deceased)

Was death antepartum? Yes □  No □
   intrapartum? Yes □  No □
   postpartum? Yes □  No □

Expected date of delivery: ............
Date of death: ............. (day) ........ (month) ........ (year).

Cause of death as recorded in the death certificate: 1. ............... 
  2. ............... 
  3. ............... 
  4. ............... 

Relevant Medical, Surgical or Family History:

Previous Pregnancy

<table>
<thead>
<tr>
<th>Year</th>
<th>Duration of Pregnancy</th>
<th>Complications</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Present Pregnancy

Intended place for delivery: Home □ Hospital □
Care undertaken by: Specialist obstetrician □
                   General practitioner □
                   Midwife □
                   Nurse □
                   Other □

Blood tests: Group .....................
Rh factor .....................
Syphilis serology ............

Height of patient ........... cms

### Antenatal Examinations

<table>
<thead>
<tr>
<th>Date</th>
<th>Haemoglobin (g/100 ml)</th>
<th>Weight (kgs)</th>
<th>Blood pressure</th>
<th>Protein</th>
<th>Urine Glucose</th>
<th>Oedema</th>
<th>Other signs and symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Abortion  Spontaneous □ Induced □

Method used for induction of abortion:
Complications:
Treatment:

Other complications of Pregnancy:
Delivery

Date: ........ (day) ...... (month) ...... (year)

Actual place of delivery:
If different from the intended place, state reason for transfer:

Duration of labour: First stage ...... hours ...... minutes
Second stage ...... hours ...... minutes
Third stage ...... hours ...... minutes
Total time ...... hours ...... minutes

Onset of labour: Spontaneous .................
Induced .................
(If induced state method)
Induction-delivery interval ...... hours

Complications of labour:

Mode of delivery: Spontaneous ☐
Operative ☐ (state indication)

Complications of delivery: Spontaneous ☐
Operative ☐

What was the blood loss? ............... ml

Were the placenta and membranes complete? Yes ☐ No ☐

State any placental abnormalities:

Oxytocic drugs used (dosage and route):

What was the status of person in charge of delivery? Specialist obstetrician ☐
General practitioner ☐
Midwife ☐
Nurse ☐
Other ☐
Analgesia and/or Anaesthesia

Drugs used for analgesia:
Route: ....................................................
Dosage: ...................................................
Abnormal event: .................................

Method of anaesthesia:
Route: ....................................................
Dosage: ...................................................
Abnormal events: ..............................

Status of anaesthetist:  
- Specialist anaesthesiologist ☐
- Specialist obstetrician ☐
- General practitioner ☐
- Midwife ☐
- Nurse ☐
- Other ☐

Baby

Condition of baby or babies at birth:  
- Alive ☐
- Dead ☐
- Macerated ☐

Did death occur in first seven days after birth?  
- Yes ☐
- No ☐

Birth weight ............ grams
State any congenital malformation?
### Puerperium

<table>
<thead>
<tr>
<th>Anaemia:</th>
<th>Yes □ No □</th>
</tr>
</thead>
<tbody>
<tr>
<td>State lowest haemoglobin and day of puerperium (g/100 ml)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Puerperal Infection:</th>
<th>Yes □ No □</th>
</tr>
</thead>
<tbody>
<tr>
<td>Causal agent and site:</td>
<td></td>
</tr>
<tr>
<td>State other complications of puerperium:</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Thromboembolism:</th>
<th>In pregnancy? Yes □ No □</th>
</tr>
</thead>
<tbody>
<tr>
<td>In labour? Yes □ No □</td>
<td></td>
</tr>
<tr>
<td>In puerperium? Yes □ No □</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Any predisposing factors?</th>
<th>Varicose veins □</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steroid therapy □</td>
<td></td>
</tr>
<tr>
<td>Sepsis □</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Suppression of lactation:</th>
<th>Yes □ No □ State method used:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Blood transfusion:</th>
<th>In pregnancy? Yes □ No □ If yes, state amount ..... ml</th>
</tr>
</thead>
<tbody>
<tr>
<td>In labour? Yes □ No □ If yes, state amount ..... ml</td>
<td></td>
</tr>
<tr>
<td>In puerperium? Yes □ No □ If yes, state amount ..... ml</td>
<td></td>
</tr>
</tbody>
</table>

| Any complications? | Yes □ No □ |

| Any other complication of puerperium? |

### Pathological Examinations:

<table>
<thead>
<tr>
<th>Post-mortem report in full</th>
<th>Yes □ No □</th>
</tr>
</thead>
<tbody>
<tr>
<td>Histological investigations in full</td>
<td>Yes □ No □</td>
</tr>
<tr>
<td>Bacteriological examinations in full</td>
<td>Yes □ No □</td>
</tr>
<tr>
<td>Was the post-mortem examination made by a pathologist?</td>
<td>Yes □ No □</td>
</tr>
</tbody>
</table>

---

**Note by WHO Secretariat:**

Please see main body of the maternal mortality/morbidity sub-group's report (just after the diagram) where certain additions are recommended for notes of an epidemiological nature, e.g., income, education (these could be towards the beginning of the form) and for notes of information from non-medical persons such as family members or TBA or others (these could come at the end of the form).
Chairman: Dr F. Hefnawi
Rapporteur: Dr E.S. Grech

1. **Definition of Maternity Care**

Maternity care involves a group of planned activities that are carried out by an integrated health team, with a view to reducing mortality and morbidity. These activities are directed to help families to appropriately adjust to the events of pregnancy, labour, puerperium and parenthood. They are also directed to help parents to develop competency in carrying out tasks of child care, including breast-feeding, and in adopting attitudes and measures that improve the family life and contribute to community welfare.

2. **Objectives of the Sub-group**

- to formulate a protocol for measuring the priority needs of services and for these services;
- to provide some notes on formulating strategies to meet these needs; and on exploring the delivery of services locally and whether these services meet the needs.

3. **Definition and Measurement of Needs**

Formulation of the problem
- magnitude;
- types of problems;
- factors contributing to the problems (coverage of services, including home deliveries and difficulties of referrals).
4. Definition of Service Needs
   - activities needed;
   - types and levels of personnel;
   - health manpower development;
   - supplies/equipment;
   - structure strengthening (e.g., needs for strengthening Ministry of Health
     MCH Department or other services).

5. Methodology
   (a) Confidential enquiry into maternal (and eventually into perinatal) deaths.
       (see Annex I and Annex Ia)
   (b) Community-based survey of newly-delivered women within 4-6 months of confinement.
       Such a survey must have the following requisites:
       - urban/rural samples (approximately 1,000 births needed in each "box");
       - personnel (social workers, nurses, students);
       - link to antenatal or hospital records if possible.

Priority variables for survey
1. Socio-economic background.
2. Obstetrical history.
3. Knowledge about availability of services.
4. Attendance for antenatal care (where, when, etc.).
5. Examinations performed.
6. Delivery (where, by whom).
7. Presence of complications - pregnancy
   - labour
   - postpartum
8. Was patient advised to
   - go to next level of antenatal care?
   - deliver in hospital?
   - use family planning?
   Was advice taken?
9. Were home visits performed during antenatal and postnatal period?
(c) Study of present activities in service outlets in the same areas

Outlets
- TBAs and other front-line workers.
- Dispensaries, health centres, MCH clinics, etc.
- First level hospital.
- Second level hospital.
- Third level hospital (teaching).

Preferably this study to be conducted in one or several defined areas representing a referral chain. The study should be given policy and logistic support from community organizations, e.g. women's associations, religious leaders, etc.

Methods
- Meeting with staff;
- record file review;
- direct observation of practices;
- interviews with individual staff, clients, supervisors.

Study team (steering committee)
- representatives from hospital clinicians;
- representative from Ministry of Health, MCH or PHC;
- representative from nurse/midwives, health visitors or equivalent;
- representative from other institute, higher research or service.

Data collectors

Preferably the same as in community-based survey (as (b) above). If a Field Training Area for medical students, nurses or midwives exists, these can help to collect this type of data with benefit to themselves as well as to the survey.

Variables
- Characteristics of patients (age, parity, reasons for visits etc.);
- number of visits per month
  antenatal; deliveries; postnatal; family planning;
- description of service
  - type and number of staff;
  - in-service training;
  - activities;
  - equipment/supplies;
  - record system;
  - transport/communication.

**Activities**

Selection of limited number of priority activities to be studied
- home visits;
- history taking (for screening of risks);
- selected examinations;
- height (weight when scales available);
- BP/urine where applicable;
- administration of treatment anaemia/toxaemia;
- referral of at risk cases;
- administration of health instruction to patients;
- facilitating breast-feeding.

**Baseline evaluation: approaches for measuring variables**

(i) Recording whether task is performed or not.
(ii) Define what is adequate for the specified activities, recording whether they are adequately performed or not.
(iii) Feedback of findings to staff, eliciting clarification, comments.

6. **Strategies for Improvement/Extension of Maternity Care**

(a) Analysis by study team of problem, using data on:
- maternal mortality/morbidity (cause and magnitude);
- perinatal mortality/morbidity;
- data from community surveys
  use/non-use of services available
  constraints (economic, geographical accessibility);
- data from service study:
  coverage
  effectiveness
  performance
  constraints: lack of training, number of staff and equipment.

(b) Based on this analysis - selection of most effective and feasible strategy to improve/expand services, e.g.

- resource reallocation according to risk approach;
- reallocation of tasks/responsibilities to different health workers, including refresher training and change of basic curricula;
- increase in number of staff;
- increase of number of maternity beds;
- creation of additional MCH centres and hospitals;
- improvement of transport for referral;
- improvement of technical facilities at hospital/HC;
- creation of facilities near materinities for near-term pregnant risk cases;
- creation of community activities for health education and information to the public

(c) Designing projects to implement selected strategies from above list, implement them as pilot projects in the study areas.

(d) Evaluation
- By conducting a second community-based survey of newly delivered mothers.
- If the above shows no or insufficient improvement, repetition of service study and formulation of new strategy.

(e) Implementation of chosen strategy at national level
- report to Ministry of Health, publication, information about the results;
- seminars/workshops for policy-makers and high level administrators;
- exchange of results of studies between countries in the Region.
PLENARY DISCUSSION

During the discussion it was made clear that samples for the surveys would have been taken both from urban and rural areas.

It was explained further that the list of variables listed in the report was not exhaustive and by no means binding on all the investigating teams. Each contracting team was at liberty to include whatever variables were considered relevant to its area or country.

It was agreed by some participants that the Group should have defined the basic needs of maternity care; but the Group had found this difficult, because it was important that the relevant problems and resources of a particular country be known first before a standard could be set for that country. It was felt that the maternal and perinatal mortality studies would indicate what the minimum requirements would be in each area. One could certainly specify some targets however, which would help in implementing programmes.

On the question of funds, it was explained that there should be no problem in carrying out such studies. They were not an expensive type of study and did not need a lot of personnel. Local resources could be added to any funds given by WHO or UNFPA.

There was some discussion on the sample size and it was felt that samples should not be large and only relevant information should be sought so as to diminish the task of analysis. One would need to include about 50 - 150 clinics in the study. The Group felt that it would be possible to assess effectiveness and efficiency by analysis of all the available information in the studies.

It was suggested that in order to improve the referral system it was desirable that members of hospital staff should visit peripheral units periodically. This would lead to better understanding of the problems and would strengthen the links between hospitals and satellite units, thus improving the quality of work and feedback from these units. It was imperative that the lowest cadre of staff of these units should feel that they belong to the same team of Maternity Care. It was emphasized that the peripheral unit should expect support from the Medical Officer
of Health and/or Central Hospital, and the Ministry of Health in its turn should feel responsible for supervision of the peripheral units through its major units (a type of supervision down the line).

The Group did not have sufficient time to discuss what the optimum interval between the initial survey and a post-intervention study should be. A question was raised about cost analysis of the intervention that would be needed to improve the service. It was felt that costs would be worked out at the time of the first evaluation. It was also felt that control groups would become necessary if the interval between the survey and evaluation was too long.
ANNEX III

REPORT OF SUB-GROUP 3
PERINATAL MORTALITY AND MORBIDITY
LOW BIRTH WEIGHT

Chairman: Dr Franz Rosa
Kapporteur: Dr Shaili Ghosh

1. CROSS-SECTIONAL PREGNANCY OUTCOME
   EPIDEMIOLOGY PROTOCOL

General Objectives

Sample cross-sectional pregnancy outcome epidemiology helps to provide information on factors associated with unfavourable pregnancy outcome in countries with complete vital statistics (1), but is especially useful as a starting point in areas which do not have adequate vital statistics (2). Optimally the studies should be based on samples which have comprehensive birth registration. But even where this is not available, sample studies can be done which can compare the relative role of various background factors for births in any sample. These can range from samples of hospital deliveries to samples of midwife rural home deliveries. Samples can focus on low birth weight babies or on birth effects to answer various questions. With such a focus, questions can be answered with relatively small samples.

Birth background factors of interest can include age, parity, previous reproductive loss, prenatal care, nutrition, education, social, economic, occupation, teratological exposure, birth interval, breast-feeding, post-partum amenorrhoea and contraceptive indices.

The broad objective is to obtain as representative information as possible with the resources available for advocacy to influence policy, training and services.

Specific Objectives

To study outcome of pregnancy.

To study particularly the problems of low birth weight and perinatal mortality.

To study the influence of prenatal care on the outcome of pregnancy.
To prevent foetal wastage.
To modify training to suit requirements.

Questions

Example questions, for which answers can be provided, include the following:

1. What are prenatal risk factors which should command priority attention?
2. What prenatal measures improve pregnancy outcome?
3. How does birth interval influence pregnancy outcome? How do breast-feeding, post-partum amenorrhoea, socio-economic and contraceptive factors interact to influence this? (3)
4. Are birth defects related to teratological exposures?

Methodology

There was a great deal of discussion on the type of study to be undertaken, and pros and cons of a retrospective and prospective study. The Group agreed on:

1. Retrospective study from the records of an institution. The same proforma could be used to the extent the information is available from the records.
2. Contact at the point of termination of pregnancy and information regarding pregnancy to be recorded by recall, or from whatever records are available.

A completely prospective study of population was considered too difficult and expensive, and in any case likely to influence the results by repeated contact and enquiry.

Departments of Obstetrics, Paediatrics, Pathology and Community Medicine should collaborate in the study.

The method is by interview of women who have recently delivered. This interview can be conducted by any literate person. Particularly suitable are midwives, social workers, and health students (as an education exercise).

Sample selection can simply be based on women delivered by a given delivery service, or more complexly, on randomized selection of interviewees from a comprehensive birth registration area, or focused on a particular problem to be studied such as low birth weight or malformation.
Responses should be codable.

Birth weight should be obtained. (As an elaboration, a neonatal development examination could be used to confirm duration of gestation).

Whether the sample is based on a comprehensive registration area or not, the sample must be described so that one can know what it represents.

The study should be standardized sufficiently so that observations can be made which are comparable between different areas and different periods of time.

Validity checks through comparison of interviews and records should be done.

A multi-purpose study has advantages over several separate studies, not only because of efficiency and better sample size, but also because of better opportunity for multi-factoral analyses. However, data should be limited to factors which can be usefully analyzed.

Professionals should collaborate with village agents such as birth attendants to obtain complete information on pregnancy events.

SECTORS OF INTEREST

- Rural unserved
- Rural served
  (Industrial health coverage in a few countries)
- Urban poverty sector

Suggested sample size = 5,000 events.

QUESTIONNAIRE

1. Interviewer identification (can be stamped on all questionnaires)
   1.1 Interviewer. Name.
   1.2 Location (cross reference with sample description given separately).

2. Interviewee identification and description:
   2.1 Name
   2.2 Address
   2.3 Age
2.4 Parity
2.5 Living children
2.6 Liveborn children that died
2.7 Stillbirths
2.8 Abortions (spontaneous)
2.9 Maternal education:

| None | Years of education | Non-formal literacy |

2.10 Maternal work (defined categories)

Type of activity

2.11 Paternal occupation

2.12 Maternal weight (defined) Kg.

Maternal height (cm) Family structure

3. Information on most recent birth outcome

3.1 Birth date

3.2 Term or duration of gestation (as practical - apply WHO Low Birth Weight Study experience)

3.3 Maternal habits

3.3.1 Caffeine-tea, coffee, cola, khat, betel, marijuana (ganga, bharg, hashish) other.

3.3.2 Cigarettes

3.3.3 Pharmaceuticals (specify)

3.4 Maternal diet, main foods, meat, cravings, aversions, taboos

3.5 Prenatal care

3.5.1 Date of first antenatal visit

3.5.2 Drugs used

3.5.3 Any food supplementation, when it started

3.5.4 Tests, Hb, Urine, Blood pressure
3.6 Maternal illness

3.6.1 Infections: Hepatitis, kidney, malaria, helminthiasis, schistosomiasis where applicable

3.6.2 Hypertension

3.6.3 Anaemia

3.6.4 Other

3.7 Complications

3.7.1 Toxaemia or Hypertension (developing during pregnancy)

3.7.2 Haemorrhage - early or late

3.7.3 Other

3.8 Delivery management

3.8.1 Attendant

3.8.2 Type of Delivery

3.8.3 Management of cord

3.8.4 Anaesthetic/analgesic

3.8.5 Other drugs

3.8.6 Complications

3.8.7 Special procedures

3.9 Birth outcome (7 days observation)

3.9.1 Sex

3.9.2 Weight (grams)

3.9.3 Head circumference (cm)

3.9.4 If death, age at death - likely cause. Respiration or other signs of life

3.9.5 Malformation

3.9.6 Jaundice
4. Information on preceding pregnancy and birth interval (applicable only to multiparae)

4.1 Living? If not, age at death?

4.2 Breast-fed, months?

4.3 When last child was born or abortion occurred

4.4 Menstruation return, after how many months?

4.5 Contraceptive method(s) used following preceding pregnancy

4.6 Were these discontinued before most recent pregnancy began?

5. Post-partum

5.1 Complications

5.2 Plans to breast-feed (months)

5.3 Desire to avoid pregnancy while breast-feeding

**SAMPLE DESCRIPTION**

1. Location

2. Hospital/Home

3. Urban/Rural

4. Social and/or anthropological

5. Educational range

6. Occupational range

7. Possible teratological exposure (for birth defect studies only)

8. Service coverage

9. Means of access to service

**OTHER PERINATAL STUDIES OF INTEREST**

1. Maternal mortality investigation should be a maternal and child health standard operating procedure.

2. Infant mortality investigations are necessarily on a sample basis. The Pan American Health Organization Infant Mortality investigation provides an example. (4).
3. **Attitude towards breast-feeding, post-partum amenorrhoea and birth spacing.**

Breast-feeding and related birth interval are important factors in infant nutrition and development, maternal nutrition and pregnancy outcome. Although many studies have been done on knowledge, attitude and practice of contraception, and several studies have been done on attitudes towards menstruation, no studies are available which are focused on the attitude towards post-partum amenorrhoea which could be an important factor in the success of birth spacing and breast-feeding.

4. **Tetanus neonatorum field studies.** *Tetanus neonatorum* deaths often occur after newborns are lost from delivery attention, and careful field investigations reveal the problem to be much more prominent than previously believed. In areas where a problem is recognized, studies can be done on the influence of maternal immunization and improved delivery practices.

5. **Studies of maternal anaemia** are a widespread priority. Other nutritional questions may be of interest.

6. **Case control studies of birth defects,** although following the approach described, need more elaboration and definition. Setting up a reporting system and quick investigational response is a preceding requirement.

7. **Abortion studies** may be a priority in some locations.

8. **The survival of low birth weight infants** must be studied in areas where investment in prematurity nurseries may well improve immediate mortality but increase mortality after discharge because of disruption of breast-feeding.

9. **Dietary cravings, aversions and taboos during pregnancy.**

10. **Rooming-in of babies.**

   It was felt that a visit on second day would be useful for standardizing the weight as well as head circumference. Relationship of weight/head circumference was considered the best indication of foetal malnutrition. To get complete information on perinatal mortality, the patient would have to be visited on second day, eighth day, and if the incidence of neonatal tetanus was to be studied, then even a third visit was necessary.
Investigators should be trained before starting the survey, and the population could be prepared in advance of the survey.

Some questions were raised about how the survey would be started, how would a pregnant woman be identified, etc. It was mentioned that all the health personnel would be informed about the survey, and if necessary, TBAs may be given some incentive money for taking part in the survey and reporting a birth.

The methodology of doing haemoglobin estimation was discussed and it was felt that the Talqvist paper was unreliable, and the cyanmethaemoglobin method should be used.

Some information as to whether a marriage was consanguineous and to what degree may be essential in much of this Region.

The problem of post-partum amenorrhoea was discussed and it was pointed out that five or six per cent of women become pregnant during this period, and so women should be advised regarding contraception.

The methodology of recording past reproductive history should be simplified. Mothers often do not remember deaths or foetal losses.

Some information was given about studies which have been or will be carried out in the Region:

There were studies on infant mortality 1974-1976 in Sudan and Afghanistan. However the studies were difficult to implement in the rural areas, and the information obtained was not as revealing as that from the Inter-American Child Mortality Study.

A Regional Scientific Working Group Meeting on Breast-Feeding was planned for 26-30 January 1981, and this was expected to lead to some new studies on this subject. There was very little information on the practice of rooming-in or otherwise and the time of first breast-feed. This also could be the subject of a study.

A special meeting on *tetanus neonatorum* may be held in 1981. A study evaluating comparatively the roles of TBA training and of tetanus toxoid administration to neonant mothers, and of both combined, would be really helpful. The most cost-effective way of preventing tetanus could thus be identified. Tetanus toxoid could be given to all mothers attending MCH clinics and not the pregnant ones only.
It was felt that the studies of maternity care and perinatal health could complement each other to a great extent.

REFERENCES


ANNEX IV

LIST OF BACKGROUND DOCUMENTS

1. MATERNAL MORTALITY EASTERN MEDITERRANEAN REGION


GHANAI (P) et al, Study of maternal death in Amin Hospital in Isfahan, Iran. Iran, J. Pub. Health 1976, 5/3, 155-167


AZIZ (S.A), Maternal mortality in nonbooked patients in a teaching institution in the Southern Region of Pakistan, Pak. Med. Rev. 1968, 3/8, 54-62


JANJUA, S., Maternal Mortality in major city hospitals of Pakistan, J. Pakistan, Med. Assoc. 1979, Feb. 29, (2), 31-5


VALENSI, G. et al, La mortalité maternelle à la maternité de l'hôpital Charles Nicolle, Tunisie médicale, Juin 1960, 471-487
2. MATERNAL MORTALITY OTHER DEVELOPING COUNTRIES OR GENERAL


CHOWDHURY, T.A., Morbidity and mortality due to pregnancy and childbirth, Bibliography on Human Reproduction Family Planning and Population Dynamics. WHO, South East Asia Regional Office, New Delhi, 1977


3. HYPERTENSIVE DISORDERS OF PREGNANCY


Report on the Meeting on Hypertensive Disorders of Pregnancy, etc., Geneava, 29 August to 2 September 1977, WHO Document, MCH, 78.2

4. MATERNITY CARE


Essex, B.J. and Everett, V.J. Use of an action-oriented record card for antenatal screening. Tropical Doctor, July 1977, 134-138


5. PERINATAL MORBIDITY AND MORTALITY - BIRTH WEIGHT DISTRIBUTION

Perinatal Care in developing countries. Report of a workshop held in Gimo, Sweden 1976. Published by University of Uppsala 1977

Birth Weight Distribution - an Indicator of Social Development. SAREC/WHO Workshop Report, published by SAREC in 1978


6. GENERAL


ANNEX V

LIST OF PARTICIPANTS

Dr A.S. Abbas
Director
Department of Maternal Health
Ministry of Health
Mogadishu
Somalia

Dr A.M. Awad
Senior Obstetrician/Gynaecologist
Director
Wad Medani Hospital
Wad Medani, SUDAN

Dr Hassan Baldo
Director
Department of Maternal Health
Ministry of Health
Khartoum
Sudan

Dr Durrai Shahwar
Khyber Medical College
Peshawar
Pakistan

Dr M.F. Fathalla
(Chairman)
Dean
Faculty of Medicine
Assiut University
Assiut
Egypt

Dr Fouad Helwawi
Professor of Obstetrics and Gynaecology
Faculty of Medicine
El Azhar University
Cairo
Egypt

Dr Samia Janjua
(Rapporteur)
Consultant in Obstetrics and Gynaecology
Central Government Polyclinic
Islamabad
Pakistan
Dr. Hadad O. Karoum  
Professor of Obstetrics and Gynaecology  
Faculty of Medicine  
University of Khartoum  
Khartoum  
Sudan

Dr. Ismet Majeed  
Assistant Professor of Paediatrics  
Jinnah Post-graduate Medical Centre  
Karachi  
Pakistan

Dr. Nasser A. Nasser  
Gynaecology and Obstetrics Specialist  
Ministry of Health  
Aden  
Democratic Yemen

Dr. M. Rizk  
Chairman  
Department of Obstetrics and Gynaecology  
Shatby Hospital  
Alexandria University  
Alexandria  
Egypt

Dr. Mohammed A.R. Al-Sakkaf  
Paediatric Specialist  
Ministry of Health  
Aden  
Democratic Yemen

Dr. M. Samoor  
Professor of Obstetrics and Gynaecology  
Faculty of Medicine  
Ain Shams University  
Cairo  
Egypt

Secretariat  
Dr. S. Alexanian, MCH, WHO, Geneva  
Mr. S. Brogger, FHE, WHO, Geneva  
Professor T.A. Chowdhry, Dacca, Bangladesh (STC)  
Dr. R. Cook, MCH, WHO, EMRO (Secretary)
Dr Karin Edström, FHE, WHO, Geneva  
Dr Shanti Ghosh, MCH, WHO, Afghanistan  
Professor E.S. Grech, Malta (STC)  
Dr Angèle Petros-Barvazian, Director, FHE, WHO, Geneva  
Miss A. Riahi, NUR, WHO, EMRO  
Dr G. Rifka, EMS, c/o WHO, Geneva  
Dr F. Rosa, FDA, Washington, D.C. (STC)  
Mrs E. Royston, FHE, WHO, Geneva  
Professor R. Trussel, London (STC)  
Mrs R. Zagoritis, WHO, EMRO

**MEMBERSHIP SUB-GROUPS**

<table>
<thead>
<tr>
<th>GROUP I</th>
<th>GROUP II</th>
<th>GROUP III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maternal Mortality and Morbidity</td>
<td>Maternity Care. Definition and measurement of needs. Formulating and evaluating strategies to meet needs</td>
<td>Perinatal Mortality and Morbidity. Distribution of Birth Weight</td>
</tr>
</tbody>
</table>
| Prof. M.F. Fathalla  
Prof. Hadayd O. Karoum  
Dr Samia Janjua  
Dr Nasser A. Nasser  
Mr. S. Brogger  
Prof. T.A. Chowdhry  
Prof. R.A. Trussel | Prof. M. Rizk  
Dr A.M. Avad  
Prof. F. Hefnawi  
Prof. E.S. Grech  
Miss A. Riahi  
Prof. R.A. Trussel | Prof. M. Samoor  
Dr H. Baldo  
Dr A.I. El Sakkaf  
Dr A.S. Abbas  
Prof. Ismet Majeed  
Dr Franz Rosa  
Dr S. Alexanians  
Dr Shanti Ghosh |