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NIGERIA TRIP REPORT

April 22-May 10, 1991

**Colleen Conroy, MotherCare/John Snow, Inc.
Margaret Marshall, MotherCare/American College of
Nurse-Midwives**

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ACRONYMS

| | |
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| CCCD | Combatting Childhood Communicable Disease Project |
| CHEW | Community Health Extension Workers |
| CHO | Community Health Officer |
| DHS | Demographic and Health Survey |
| FMOH | Federal Ministry of Health |
| LGA | Local Government Administration |
| NTT | Neonatal Tetanus Toxoid |
| NFHS | Nigerian Family Health Services Project |
| PHC | Primary Health Care |
| TBA | Traditional Birth Attendant |
| VVF | Vesico-Vaginal Fistula |

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I. EXECUTIVE SUMMARY

The MotherCare Project was invited by the Federal Ministry of Health, the Primary Health Care Unit (FMOH/PHC), to assess the magnitude and major causes of maternal and neonatal mortality and morbidity in Nigeria and to identify potential strategies to address the problems as well as specific interventions which could be supported through the MotherCare Project. Prior to the MotherCare invitation, The American College of Nurse Midwives (ACNM) was invited by FMOH/Hospital Services and Training Unit to assess the opportunities for technical assistance through ACNM to upgrade and strengthen midwives' skills. Therefore, ACNM joined the MotherCare team to conduct this preliminary assessment.

During this assessment visit, the MotherCare team visited all three zones and focused on five major themes in each zone areas: the magnitude and causes of the problem; the ability of the providers at all three levels of the Primary Health Care System to identify and respond to the problem; the responsiveness of the PHC System; and the role and capability of the community to recognize problems and take appropriate actions. A special assessment of midwives' skills and training institutions was also made.

The maternal mortality ratios in Nigeria are alarmingly high and range between 700-1600/100,000 live births. The causes are similar to those seen in other developing countries--hemorrhage, obstructed labor, eclampsia, sepsis, and unsafe abortions. The factors influencing these high rates include: teenage marriage/pregnancy, high parity and close birth spacing, low access to and underutilization of health services, particularly for delivery services. The blame for this suboptimal utilization of government services has been attributed to the recently levied fees for maternal care services, the education level of the community, problems related to access and women and family preferences.

The high neonatal mortality rates also reflect the poor health and nutritional status of women and lack of or underutilization of quality maternal care services. There is a high prevalence of neonatal tetanus in some areas of the country and death due to birth trauma and asphyxia. Low birth weight is common and thought to be due to maternal anemia which is also very prevalent in some seasons and geographical areas (either iron deficiency or malaria induced or both). There is also concern that breastfeeding practices are eroding both in the urban and rural areas, thus putting both the health of the mother and the nutritional and health status of the baby at risk.

Although there appears to be adequate numbers of staff working in the PHC System, there are distribution problems in some areas of the country with evidence of physicians' and midwives' resistance to post assignments below the district level. The persistently high levels of obstetrical emergencies and serious complications arriving at secondary and tertiary centers implies that neither the providers nor the system are able to effectively identify problems and respond with the appropriate treatment or referrals in a timely fashion. It is also apparent that the women and communities are unaware of the danger signs of pregnancy and prefer to use TBAs, herbalists or prayer

houses for assistance during delivery rather than seek services by trained providers.

While the PHC System is the ideal infrastructure through which to reach and service women during pregnancy, the system is just getting underway in some areas and is thus experiencing problems with record keeping and referral systems as well as the supply and maintenance of basic equipment. Drugs appear to be more readily available due to revolving funds for drugs which are in place in many areas of the country. It is felt that with specific technical assistance in areas such as training and communications that the system could be considerably strengthened.

Based on the magnitude of the problem and current capabilities of the government and non-government sectors in Nigeria, it is felt that the time has come to expand the focus beyond child survival and family planning projects and to include a broader focus on the health and nutritional status of the mother and neonate. Projects such as the Nigerian Family Health Services Project (NFHS) and the Combatting Childhood Communicable Diseases Project (CCCD) have enhanced country capabilities to address issues of child survival and family planning as well as develop expertise in health information systems, commodity distribution systems, community mobilization and the I.E.C. process.

Based on these considerations, as well as a strong political will to address the problems related to maternal and neonatal mortality, the MotherCare Project proposes to offer the FMOH/PHC Unit a technical assistance package aimed reduce maternal and neonatal mortality, to upgrade providers' skills and to strengthen the PHC infrastructure. MotherCare proposes this technical assistance in three discrete but interactive areas: **diagnostics, training and information, education and communications (I.E.C.)**. It is also recommended that MotherCare focus these interventions in at least four States, ideally in those States where NFHS and CCCD have had major inputs in order to maximize both skills and resources.

MotherCare debriefed representatives from the FMOH and USAID regarding major findings during this fact-finding mission and recommended specific activities which could be provided by MotherCare in an effort to address the problems of high maternal and neonatal mortality and morbidity. These activities were discussed in detail and agreed upon in principle. At this meeting it was further agreed that MotherCare would write the first draft of the proposal and would submit, by the end of May, 1991, the draft to the FMOH/PHC Unit and USAID for their review, additions, depletions. The draft proposal is included within this report. It is anticipated that the FMOH will return the next draft with comments to MotherCare by the end of June. To ensure that the proposal represents the views of the FMOH and is compatible with the MotherCare areas of expertise, it might be advantageous for Dr. Adeyemi to travel to the U.S. in July to work with the MotherCare staff to finalize the proposal.

II. PURPOSE OF VISIT

The MotherCare team was invited to Nigeria by the Federal Ministry of Health, Primary Health Care (FMOH/PHC), to participate with the FMOH in a fact-finding mission to assess the extent and associated factors related to the seriously high maternal and neonatal mortality; to identify potential strategies and activities to address the problem and to propose specific interventions which could be supported through the MotherCare Project.

To this end, the MotherCare team (Dr. Marshall and Ms. Conroy), accompanied by Dr. Adeyemi, Assistant Director, FMOH/PHC, toured Zones A, B, C in order to assess the maternal and neonatal health and nutritional status in the zones and the capability of the providers and the responsiveness of the services within the PHC care system to appropriately address the problems and to assess the communities' access and use of the maternal care services which exist in the three zones.

In addition, during the first week of the visit, Dr. Marshall with Mrs. Payne, Chief Nursing Officer, Health Services and Training, visited Zones A, B, D to assess skills and practice levels of midwives in these zones. As part of the assessment they observed and interviewed midwives and tutors and visited Schools of Midwifery.

III. BACKGROUND

A. Maternal and Neonatal Health Status

Women ages 15-49 make up 24% of the population in Nigeria and the level of live births is 48/1000. The maternal mortality ratio for developing countries has been roughly calculated as 400 per 100,000 live births which is extremely high as compared to developed country ratios of 2-9/100,000 live births. According to recent studies, ratios in Africa average 700-1000/100,000. While the ratios in Nigeria are consistent with those of other West African countries, some areas in the country are reporting ratios as high as 1500/100,000 live births. The documented causes are similar to those seen in other developing countries--obstructed labor, sepsis, hemorrhage, eclampsia and unsafe abortion. Some of the factors associated with these mortalities include the high prevalence of teenage marriages, high parity with close spacing, low adult literacy rates (54% males and 31% females), poor access to quality maternal care services (approximately 30% of the rural population live within 4kms of health services) and a general underutilization of maternal health services.

The 1990 Nigeria Demographic and Health Survey (DHS), Preliminary Report, indicates substantial differences in the utilization of various services provided by trained health workers. For example, 57% of women surveyed received at least one antenatal check up. However, only 32% of the births were assisted by a trained attendant. According to the DHS, the level of education is a significant influence upon the utilization of maternal care services. For example, among those women accessing antenatal services by

trained providers, 91% had secondary education but only 44% of women without schooling received antenatal care. Similarly, 82% of the "schooled" women received at least one tetanus toxoid injection as compared to 42% of the "non-schooled" women. The contrast is even sharper between the utilization of delivery services. Whereas the majority of the women with some schooling had assistance at delivery by a trained attendant, only 16% of the women with no education delivered with a trained provider.

According to other reports and discussions during this assessment visit, the recently levied fee for maternal care services is a major deterrent to utilization. However, other cited barriers include the distance and travel costs and dissatisfaction with services and staff attitudes. Some complain that they are treated with disrespect, and that there are frequently language and cultural differences. In some areas of the North, women are completely dependent upon their husbands, both for the approval to use services as well as the cash to pay for care.

The high neonatal mortality rates (43/1000) also reflect the poor health and nutritional status of women as well as raise questions regarding the inappropriate use of services and/or the quality of services. There is a high incidence of neonatal tetanus in some areas of the country. According to the DHS, 54% of the women surveyed received at least one tetanus toxoid injection. However, at least two doses of tetanus toxoid are needed to provide adequate protection against tetanus. According to Nigeria's report at the Accelerated Control of Neonatal Tetanus Workshop in Harare, July, 1988, tetanus is a major public health concern in Nigeria. Their reported incidence rate in 1983 was 8/1000 and 4/1000 in 1987. However, in 1987, the immunization coverage with two doses of tetanus toxoid was only 16% with approximately 60% of the births occurring at home.

As a result of that meeting, Nigeria, Division of EPI/CDD identified accelerated activities to be undertaken in 1989-90 in the areas of surveillance, identification of target groups and social mobilization, logistic support and training. Of particular note, they planned for a Neonatal Tetanus Toxoid (NTT) survey in 1989 (the author does not know if this survey was undertaken); they expanded their target group to include women of childbearing age; revised the immunization schedule by adding T3, T4, T5 (in line with the WHO recommendations) and projected intensification of communication efforts and training activities, particularly with regards to TBA training in clean birthing techniques (projected training 11,000 TBAs in 11 states by 1989--the author does not know of any of these objectives were met).

UNICEF, WHO and the CCCD Project are supporting the FMOH in their efforts to reduce these persistently high neonatal tetanus rates. According to UNICEF (1990 Situational Analysis) the prevalence of neonatal tetanus has not shown a steady decline as have the other immunizable diseases such as measles. Instead it appears that neonatal tetanus is on the increase! However, the 1990 FMOH, EPI/CDD Unit reported that 2,019,655 women received T2 which is a 56% increase from 1989.

The incidence of low birth weight (< 2500gms.) in newborns appears to be common and according to WHO reports, was 18% in 1982 which is in contrast to the U.S. incidence of 7%. The major factor attributing to the infant's weight is the mother's nutritional status. The actual magnitude of maternal anemia in published studies from the Guinea Savanna area indicates that 45% of the women are anemic. Maternal anemia in Nigeria is thought to be due to iron deficiency or malaria parasites or both. A survey of obstetrical admissions at the Ife Teaching Hospital between 1978 and 1987 found that anemia (primarily nutritional) constituted 7.9% of the admissions and that complications occurred in 50% of the cases and over 40% failed to deliver in hospital (UNICEF, 1990 Situational Analysis). Also recent studies indicate that the mean energy intake of 2,250 kcals was very much lower than that reported for pregnant women in developed countries (Mbofung and Atinmo, 1985). There is no food supplementation program for women in Nigeria. While there is a push to encourage families to produce their own food, this effort does not necessarily translate into proper consumption. There are seasonal variations for food availability and problems related to food storage and distribution systems.

It is clear from the DHS and observations and discussions in the field that there is a steady erosion of breastfeeding practices both in urban and rural Nigeria. According to the DHS, the majority of infants are breastfed for at least 9 months of age. However, in contrast to the optimum behavior of exclusive breastfeeding, very few babies are given breast milk to the exclusion of anything else in early infancy. For example, 90 % of the infants 3 months and under are given water and other liquids in addition to breast milk. This practice is consistent with the discussions and observations made in field (see IV. TRIP ACTIVITIES). By 4-6 months at least one-third are supplemented with solid or mushy foods.

According to a WHO collaborative study, the number of women joining the work force has been given as one reason for the drift away from the breast. However, it is thought that the majority of women work in environments where breastfeeding would be acceptable. It is also felt that there is a general lethargy among the health personnel to promote breastfeeding. Many women go into labor without any plans regarding feeding of their newborn and it is felt this lack of knowledge and preparedness leads to formula feeding without adequate consultation from health personnel.

B. The Primary Health Care System

According to the Five Year Action Plan: 1987-1991, FMOH, Primary Care Coordinating Unit, the country health care delivery system continues with efforts to strengthen the Primary Health Care (PHC) infrastructure. There have been major improvements in the range of health facilities now available and services provided. There is an estimated modern health care coverage of 50% which falls short of the projected coverage of 80% in the 1985 Plan. While adjustments are being made in the placement of staff, there still appears to be a disproportion of services and personnel in the urban areas-- 75% of all available health manpower and facilities are concentrated in the urban areas which accounts for only 30% of the total population. On the other

hand, there are numbers of newly constructed maternities and PHC centers in the rural areas which function under the direction of state and local governments. Simultaneously, the Federal Ministry of Health developed Directorates to provide guidance to the various PHC programs. In the late seventies, Schools of Health Technology were initiated and began training new cadres of rural health workers as a means to meet the shortfalls of personnel, particularly midwives and physicians, in the rural areas. It is estimated that there are now approximately 20,000 community health extension workers (CHEW--secondary and in some cases primary school graduates with one year training) in the system and approximately 2000 community health officers (CHOs--most are nurse-midwives with an additional year of training in community health).

Nigeria is divided in four Zones, each including 5-6 States (average State populations--5,000,000). The States (a total of 121 plus the Federal Capital Territory) are further divided in local government units (LGAs). There may be as many as 10 or more LGAs in one State. The LGAs (average population 300,000-500,000) are divided to districts, each of which contain numerous villages. The LGAs (currently numbering 453) are the designated units for the implementation of Primary Health Care. To that end, the LGAs are responsible for the development and management of PHC services in their area. The FMOH/PHC Unit provides funds directly to the LGAs for program implementation (heretofore they were funded by the FMOH through the States) and also provides guidelines and direction in the implementation of the system. The States provide technical assistance and supervision to the LGAs in their jurisdiction. The system of "model LGA" was initiated in 1986. These models provide practice areas for the Schools of Health Technology and frequently focus on particular modalities such as women's involvement in health and health services for difficult to access areas.

The PHC delivery system begins with health posts at the village level (usually staffed by junior CHEWs with Traditional Birth Attendants (TBAs and other community providers supposedly feeding into the system). The health centers at the district level are usually staffed by senior CHEWs and in some cases, midwives and physicians. Comprehensive Health Centers (upgraded general hospitals with a full component of staff) are located at the state level as are University Teaching Hospitals. This infrastructure embodies the PHC referral system.

While the implementation of the PHC system is underway in most States, there are still many hurdles to overcome in the provision of quality services to the population. There are problems not only as regards the skill levels of the providers but the ability of the system to provide and maintain necessary equipment and supplies at all levels. There is a lack of basic health statistics which is a major constraint to planning and evaluation of services. Furthermore, the government, private, mission and other NGO facilities are usually independently operated without common reporting systems and often without cooperation in essential PHC activities. There are also apparent deficits in health education directed towards preventive health services. While efforts are afoot, it is felt that most areas have yet to reach the level of desired community involvement and education required to make the system work. The challenge to the system remains--to develop a health

information and reporting system, to develop effective commodity distribution systems and a referral system with adequate written procedures for providers at all levels.

The ability of the system to reach women with quality maternal care services has yet to be realized. The persistently high rates of maternal and neonatal mortalities, the high number of obstetrical emergencies in "unbooked" cases arriving at government hospitals, the underutilization of maternal care services with the apparent preference for the community providers and the lack of health education messages to address and reverse these trends raises questions about the health providers and the ability of the system to function effectively. Of concern is the quality of case management by providers at all levels, specifically in their ability to identify risks, to educate clients about these risks, to initiate early and appropriate treatment, and to refer those cases which are beyond their capability.

C. Health Care Providers

1. Private sector midwives

Meetings were held with nine private sector midwives from Lagos, Ogun, Benue, and Imo states. The organization representing midwives in private practice is the Association of Private Practice Midwives of Nigeria. This association was started in the 1950's on a state by state basis. The association is most active in Imo, Oyo, Lagos, River, and Ahanambra states. It is loosely organized with an elected secretariat. Lagos state's group meets once a month and has 40-50 members of an estimated 80-100 midwives in private practice in the state. They serve as a resource to one another regarding clinical management and learning about new ideas and new technology. The group reported 40 to 400 deliveries per year per midwife. Most of the urban Lagos midwives reported that family planning and first aid constitute larger parts of their practice than does maternity care.

Many of the private midwives are retired from practice in the public sector. They have an obstetrician on their payroll who serves as backup. They also tend to perform more of the Life Saving Skills than do midwives in public sector practice. Most of those interviewed do vacuum extractions, manual removal of the placenta, suturing of cervical and vaginal lacerations, and starting of intravenous infusions.

Last October the private midwives had a three day workshop on Safe Motherhood sponsored by the Federal Ministry of Health. They are working with the Chief Nursing Officer to arrange periodic continuing education sessions in the Lagos area.

2. The Nursing and Midwifery Council of Nigeria

Meetings were held with representatives from the Nursing and Midwifery Council of Nigeria. The Council has recently instituted re-registration every three years for nurses and midwives in practice. A requirement for re-registration is proof attendance at continuing education sessions. This is an

attempt to press institutions and organizations into offering more continuing education opportunities for these professionals. The NMC is also interested in piloting a number of continuing education workshops itself. They are particularly interested in the area of Safe Motherhood and Life Saving Skills. The NMC does not however have the infrastructure or funds to carry out broad scale education programs by itself. They could however have an important role in stimulating others and collaborating with others to do the work. The council has submitted a proposal to Carnegie Corporation of New York to conduct a pilot training in use of the partograph to clinicians and tutors in the North.

The council has been working since 1987 to introduce a new midwifery curriculum into 61 midwifery training schools. Each state initially had one pilot school which adopted the new curriculum. This year all schools are mandated to start the new curriculum. The curriculum is a detailed listing of topics to be taught and number of hours to be dedicated to each content area. There is an accompanying Handbook for Implementation which spells out what books and resources are needed to implement the curriculum. The content for each topic area and scope of practice for the midwife within each topic area is not addressed.

Though the tutors and council members speak of assessing competence in practice, there is no formal mechanism for evaluation of student progress throughout the program. Their remains a trust that numbers of experiences will translate into competence in practice.

Tutors complain that they are expected to implement the new curriculum without being provided the recommended textbooks or other support materials. They also complain that the new system has deleted the month of review students had prior to sitting the national examination. This means material covered at the beginning of the program is inadequately reviewed prior to the examination.

Physicians and clinical midwives expressed concern that under the new curriculum that students are not obtaining enough labor and delivery experience to be competent at graduation time. An insufficient number of advanced students were interviewed to get their critique of the new curriculum.

The Nursing and Midwifery Council administers an entry into practice national examination twice a year. The exam requires the student to answer three of four questions. The questions are heavily recall and memorization. Students are asked to list, describe, or label (as on a diagram). Synthesis level questions requiring complex problem solving or judgment constitutes very few percentage points on the exam. In September of 1990 86% of candidates passed. In March of 1991 98% of candidates passed.

The council is currently conducting a count of all midwives in practice nationally. This count is going on currently. The Federal Ministry of Health 1986 estimate of 100,000 midwives is expected to be high as it does not account for deaths, retirement, immigration, or career changes.

3. The National Association of Midwives and Nurses of Nigeria

The National Association of Midwives and Nurses of Nigeria is the professional organization representing all nurses and midwives in Nigeria. It collects stipends monthly from staff salaries and serves as the bargaining agent to the federal government. The relationship between the two groups has been fairly adversarial.

The NAMNN also has a number of research projects and continuing education offerings. It has been very successful in obtaining donor money for its projects and is currently collaborating with Enterprise Project (USAID through John Snow), PATH, Ford Foundation, and Population Crisis Committee.

Under the umbrella of NAMNN are twelve specialty organizations including the one representing all public and private sector midwives--Professional Association of Midwives of Nigeria (PAMON). This group has been relatively inactive for some time and is now working on re-energizing its membership and mission.

IV. TRIP ACTIVITIES

A. Zonal Field Visits: Observations and Interviews

As previously mentioned, the purpose of this trip was to assess the extent of the maternal mortality and morbidity, and the degree to which the PHC system and providers at all levels are able to respond to these problems and reverse the high mortality and morbidity trends. To this end, the MotherCare team accompanied by Dr. Adeyemi visited two States in Zone A, Anambra and Akwa Ibom; two States in Zone B, Oyo and Ogun and one State in Zone C, Niger State. The trip scheduled for Zone D had to be cancelled due to internal disturbances. In every State, the team met with the Federal representatives and government and health personnel from State and LGA governments--State Commissioners and Director Generals, Zonal PHC Coordinators, Directors of PHC, University Teaching Hospital Faculty and staff, State Hospital staff, Health Center staff and one TBA. All were prepared to talk about the problems related to maternal and neonatal mortalities and morbidities in their areas; many had prepared hospital or center based statistics from the 1989-90. We toured the facilities and discussed how their institutions operated within the PHC system and the methods for communication and patient referral.

All States confirmed the high maternal and neonatal mortality ratios. For example, Oyo State reported a maternal mortality ratio of 600-800/100,000 live births and a perinatal mortality of 60/1000; Ogun State estimated a range between 700-1600/100,000 (1990). All statistics are institution based and the lack of birth and death registration at the community level makes it difficult to determine the actual causes and the real extent of the problem. However, States reported a high incidence of obstructed labor, antenatal and postpartum hemorrhage, eclampsia, sepsis and unsafe abortion. As mentioned previously, there is a high prevalence of maternal anemia with seasonal and geographic

variation; vesico-vaginal fistula (VVF) is also very common in some areas of the country, particularly among the pregnant teenage population.

Equally troubling is the reported level of neonatal and perinatal mortality. Since the majority of births occur outside of hospital, the reported rates are assumed to be the tip of the iceberg. The incidence of neonatal tetanus is of particular concern. According to Ogun State University Hospital 1990 data, 33% of the neonatal mortality was due to neonatal tetanus. Reportedly, these infants were delivered at home and were brought to hospital. At the State General Hospital, Ogun, a pediatrician reported seeing 6-8 cases of neonatal tetanus within the last six months. One LGA in Akwa Ibom reported 11 cases of neonatal tetanus on 1990. In reporting Tetanus Toxoid immunization, some LGAs do not differentiate between numbers of doses of T1 and T2. Therefore, it is not always possible to calculate the level of protection. While it appears that Mission hospitals are conducting training courses for TBAs, some LGAs said that they had not initiated any training because they did not have any TBA birthing kits. Posters promoting 5 doses of Tetanus Toxoid were visible in many clinics so it is apparent that the new policy is in place.

As mentioned previously, there appears to be a steady erosion of breastfeeding practices in Nigeria. According to reports from hospital and health center staff, the majority stated that they usually delay the initiation of breastfeeding for >6-24 hours after the birth of the baby and frequently initiate sugar water with cup and spoon during this period. This practice is in contrast to the recommended practice of initiating exclusive breastfeeding within the first hour after delivery. The delay in initiation and early supplementation (prior to 5-6 months) for maternal well-being (particularly during early puerperium for uterine contraction thereby reducing bleeding and later for the contraceptive value) and for the health and nutritional status of the neonate (particularly in the promotion of weight gain, the prevention of diarrheal disease and acute respiratory infections). According to reports, formula and bottles are not sold in hospitals, however, bottles are not banned from the hospital and some bottle feeding was observed in most facilities visited. It was also noted that bottles were being sold outside of one MCH clinic although staff at that clinic reported that they promote breastfeeding rather than bottle feeding. "Rooming in" appears to be the norm in all maternity centers.

Most government facilities indicated a decline in the utilization of services and reported a large discrepancy between attendance at antenatal clinic as compared to use of delivery services. In most cases, only about 10% of the population using government antenatal services appear to use delivery services. The excuses for this suboptimal utilization included the cost of services, problems with access (some communities are cut off during the rainy season), and in many cases, an apparent preference to deliver in the community with a TBA.

Some States reported that the increasing popularity of the fundamental Churches was influencing the choice of delivery locations. There are numerous frightening accounts, including the case of a university student with obstructed labor remaining at a prayer house for several days. In some States

it appears as though the private maternities are giving competition to the government services. Since these maternities do not report to a national health information system it is hard to estimate volume and quality of their services.

State Hospitals and University Teaching Hospitals claimed that "unbooked cases", with no history of antenatal care, frequently arrive in unstable condition and at the point of death. Some arrive in the accompany of a TBA, others indicate that they have been "treated" by a TBA but in most cases, they arrive dangerously late. Ogun State University Teaching Hospital reported that 60% of their "unbooked cases" had obstructed labor and/or eclampsia. They also identified sepsis as common due to the number of unclean home deliveries.

Many of the health staff from centers and hospitals indicated that women who do attend antenatal clinic may make 8-10 antenatal visits. Antenatal care typically includes height and weight, physical exam and history, urine (dip stick), hemoglobin (filter paper), VDRL (only available at hospitals with laboratory services). Ferrous sulfate and malaria prophylaxis are given routinely. In most places, the system of revolving funds for drugs is operational. One clinic visited in Niger State has integrated maternal care services and offers daily antenatal services, immunization, nutrition counseling, family planning services. They have also instituted a system of "Home-Based Mothers' Records" (a copy book in which the nurse writes down the maternal history and findings of the physical assessment). The mother keeps the book and the clinic keeps a registration book in which all clients have been entered. While this concept is a very good approach to involving the mother in her own care, the nurse must know the right questions to ask and how to analyze the information and counsel the mother. A copy book makes it more difficult for the nurse to record and analyze. The WHO recommended Home-Based Mothers' Record would be a much more useful and efficient tool to use.

It is not clear how health providers at any level conduct a risk assessment. Although protocols for practice have been developed, they were not readily available to the team during the visits nor was there any evidence of written procedures for referral from the primary level to secondary and tertiary levels. The physicians interviewed in the secondary and tertiary reference centers (State and University Teaching Hospitals) admitted that the referral system is not working. However, it was mentioned in one State that TBAs use a color coded card system when referring patients. However, in most areas, patients usually arrive without any written histories and it is unclear who, if anyone has referred them and for what reason. In turn, if the patient requires follow-up, she usually returns to the secondary or tertiary center where she received the initial assessment or treatment rather than being referred back to the primary level.

All facilities, including reference hospitals, indicated a shortage of supplies and equipment and a serious problem in maintaining and servicing equipment. State hospitals and Comprehensive Health Centers voiced a serious need for blood banks.

Most health staff interviewed voiced concern about the level of understanding in the community (mothers, husbands, village leaders, village health workers) about illnesses and problems arising during pregnancy and the appropriate responses to these problems. While it is known that women select to deliver at home (or at least in the community), it is not clear how decisions are made, by whom and for what problems. Most facilities seemed to be very limited in health education materials related to maternal health and nutrition. The team did not have the occasion to observe any counseling or patient education. Neither did the team have time to investigate the roles of women and women's group in the community. However, it was mentioned that "Better Life for Women Projects" exist in most States and fall under the jurisdiction of the State governors. Women in these projects are involved in small enterprise activities and perhaps some educational activities. Unfortunately, the team did not meet with anyone involved in these projects. These groups might be an appropriate conduit for spreading maternal health and nutrition messages. This potential should be explored at a later date.

B. Interviews with Midwives and Representatives from Midwifery Training Institutions

Students, tutors, and clinicians were interviewed. Tours of clinical facilities, hostels, commons areas, classrooms, demonstration laboratories, and libraries were made.

A summary of problems encountered are:

1. Safety problems

There are insufficient gloves, ambu bags, and mucus extractors in the Ministry of Health system. Therefore, students (and all others) are delivering babies bare-handed at times. They suck out depressed infants with straight catheters and perform mouth to mouth resuscitation. In this day and age of HIV infection such practices are extremely dangerous.

Due to lack of sterilizers and sufficient quantities of family planning and delivery instruments, inadequate disinfection/sterilization is common. Due to a lack of lotions (disinfectants) delivery instruments are stored between deliveries in non-aseptic conditions. Basic equipment for provision of safe family planning and obstetric care such as BP apparatus, urine testing, hemoglobin testing, and weighing scales are frequently not available or are not in working order.

2. Quality of education problems

Tutors: Tutors have no organized ongoing continuing education nor do they work consistently in the clinical areas. Therefore, many have fallen out of date in the areas of general midwifery practice (skills and theory), test construction, teaching methods, and have not added newer midwifery skills to their scope of practice such as life-saving skills, family planning, human sexuality, infertility, well woman gynecology, and sexually transmitted diseases.

Tutors were interviewed as to what skills they had gained in their own training programs and what skills they currently teach to their own students (both theory and clinical practice). Results from three schools of midwifery (Maiduguri, Abeokuta, and Uyo) with a total of 22 tutors interviewed are as follows.

Have you been trained (both clinically and theoretically) to perform the following:

| Yes | No | |
|-----|----|---|
| 11 | 11 | manual removal of the placenta |
| 15 | 7 | start IV infusions |
| 11 | 11 | bimanual compression of the uterus |
| 15 | 7 | suture (repair) episiotomies |
| 0 | 22 | suture (repair) cervical lacerations |
| 15 | 7 | suture (repair) vaginal lacerations |
| 0 | 22 | suture 3rd or 4th degree lacerations |
| 9 | 13 | perform external versions |
| 0 | 22 | perform internal versions |
| 2 | 20 | perform vacuum extractions |
| 0 | 22 | perform symphysiotomies |
| 0 | 22 | perform menstrual extractions |
| 0 | 22 | perform abortions |
| 0 | 22 | perform D&Cs |
| 10 | 12 | perform speculum examinations |
| 6 | 16 | perform bimanual examinations |
| 0 | 22 | perform female circumcisions |
| 2 | 20 | perform male circumcisions |
| 0 | 22 | perform infibulations |
| 0 | 22 | perform Heimlich maneuver |
| 8 | 14 | perform cardiopulmonary resuscitation |
| 12 | 10 | perform infant resuscitation |
| 15 | 7 | give oral rehydration therapy |
| 5 | 17 | give rectal infusions for hydration |
| 0 | 22 | give intraperitoneal infusions for hydration |
| 5 | 17 | use partograph |
| 13 | 9 | use controlled cord traction (active management of third stage) |
| 8 | 14 | perform pelvic assessment (clinical pelvimetry) |

Do you teach these skills to your midwifery students (total of three schools)?

Yes No

| | | |
|---|---|---|
| 2 | 1 | manual removal of the placenta |
| 2 | 1 | start IV infusions |
| 2 | 1 | bimanual compression of the uterus |
| 3 | 0 | suture (repair) episiotomies |
| 1 | 2 | suture (repair) cervical lacerations |
| 2 | 1 | suture (repair) vaginal lacerations |
| 0 | 3 | suture 3rd or 4th degree lacerations |
| 1 | 2 | perform external versions |
| 0 | 3 | perform internal versions |
| 0 | 3 | perform vacuum extractions |
| 0 | 3 | perform symphysiotomies |
| 0 | 3 | perform menstrual extractions |
| 0 | 3 | perform abortions |
| 0 | 3 | perform D&Cs |
| 3 | 0 | perform speculum examinations |
| 0 | 3 | perform bimanual examinations |
| 0 | 3 | perform female circumcisions |
| 1 | 2 | perform male circumcisions |
| 0 | 3 | perform infibulations |
| 0 | 3 | perform Heimlich maneuver |
| 1 | 2 | perform cardiopulmonary resuscitation |
| 3 | 0 | perform infant resuscitation |
| 3 | 0 | give oral rehydration therapy |
| 2 | 1 | give rectal infusions for hydration |
| 0 | 3 | give intraperitoneal infusions for hydration |
| 1 | 2 | use partograph |
| 1 | 2 | use controlled cord traction (active management of third stage) |
| 1 | 2 | perform pelvic assessment (clinical pelvimetry) |

Clinical tutors likewise do not have ongoing continuing education and do not have orientations as to how best teach midwifery students. Quality of teaching is variable and dated. Examinations tend to stress recall and memorization with less emphasis on complex decision making.

Schools no longer provide specialist (obstetrician/pediatrician) lectures. With the advent of the new midwifery curriculum, midwifery tutors have taken over teaching abnormal obstetrics. This has caused a number of human relations and quality of education issues. The physicians no longer get to know the students as well and can provide less assistance to those in need. The tutors have not been prepared to take over the lectures regarding abnormal obstetrics, and state they feel incompetent to carry this added teaching load well. It has also damaged relations between the physician and education program staff in a number of situations.

Libraries: Books are in very short supply within the system. Many students do not own one current midwifery text or family planning text. School libraries

are desperately out of date and poorly stocked. Some libraries do not permit students to sign out books as they are far too few to go around. Topic areas of books particularly desired include: midwifery texts, pediatrics and child health, anatomy and physiology, midwifery management, ward management, research methodologies, sociology, psychology, human sexuality, menopause/menarche, AIDS and other STDs, care of the high risk neonate, laboratory techniques, community midwifery/public health, and journals in obstetrics and midwifery.

Due to lack of resources, some schools dictate lecture notes to students; and this is their only resource to keep.

Audiovisual aids: Teaching models, practice instruments, laboratory equipment, and teaching charts are in small supply and in very poor condition if present at all. Maintenance of equipment is an ongoing problem. The educational programs visited ranged from one program which had a slide projector, overhead projector, film projector, and VCR capability (by rental) to a school which had none of these and only homemade anatomy charts.

3. System problems

Admissions and dismissals: Students outside the Mission Hospital system are not interviewed as to their interest in midwifery and desire to practice. Therefore, candidate selection is poor. Potential students see midwifery as a career pathway to advancement even though they may fear or dislike midwifery practice. Thus, the quality of graduates being infused into the system not optimum.

C. Interviews with Representatives from FMOH and International Agencies

Both the World Bank and UNICEF are involved in maternal health and nutrition projects. Supposedly, a new project with a large maternal/ child health component has just been signed with the World Bank (no details were available to the team). UNICEF has and continues to provide support in many areas including:

- **Training**--TBA training , capacity building to the Schools of Health Technology (audio visuals, text books);
- **Nutrition**--breastfeeding promotion, planning for baseline studies of micronutrients including iron deficiency in pregnancy; and
- **PHC Infrastructure**--assisting with the implementation of the Bamako Initiative.

Over the next five years, UNICEF will conduct baseline surveys in 8 focus States which will include demographics, health status, socio-economic status, resource assessment.

The Ford Foundation has provided technical and financial assistance to Nigeria over the last three years in the area of Women's Reproductive Health with assistance provided at the federal and local levels, NGOs, women's organizations. The Ford Foundation is placing major emphasis on institution

building including: research in different types of health care delivery; empowerment of local groups such as the National Association of Nigeria Nurses and Midwives and community-based research including a social science, family planning, PHC perspectives; maternal health awareness including safe motherhood conferences and support to a task force on VVF; PHC demonstration sites through Columbia University.

Project staff from the Combatting Childhood Communicable Diseases Project (CCCD) were not in the country during the MotherCare team visit but the team did have access to the Nigeria CCCD Project Annual Report, 1990 and Workplan for 1991. In 1990, the CCCD Project selected six States as focus areas to demonstrate and test strategies and approaches designed to improve child survival. During 1991 they will provide technical assistance to States to improve state-wide Health Information Systems; improve or initiate continuing education programs, utilizing the State Schools of Health Technology; accelerate key interventions in at least one LGA in malaria, CDD and EPI. In addition to their targeted Child Survival interventions, the CCCD Project has promoted efforts to increase tetanus toxoid coverage among pregnant women.

Africare has initiated a two year Maternal Health Initiative to be carried out in conjunction with the Imo State Ministry of Health/Africare Child Survival Project. Using the lessons learned from the Child Survival Project, the Maternal Health Initiative aims to address the underlying causes of maternal mortality and morbidity by promoting the use of maternal care services by a trained health provider. Maternal care promotional activities will be carried out at the community level through the Child Survival Project's Village Health Workers. It is felt that collaboration between the Child Survival and maternal health care providers will improve the health of the mothers and their children.

In reviewing and discussing project activities and resources under the Nigerian Family Health Services and the CCCD Projects, it is apparent that in-country capabilities have been enhanced at the Federal, State, LGA level in designing health information and commodity distribution systems, health education and community mobilization processes and continuing health provider education.

V. RESULTS/CONCLUSIONS/RECOMMENDATIONS

A. Summary of Major Findings

1. There is a very high maternal mortality ratio 1500/100,000 live births but with variations seen among States ranging from 700/100,000 live births to 1600/100,000 births. These figures are institution based; no community based data is available. The major causes of maternal mortality include: hemorrhage, obstructed labor, eclampsia, sepsis and unsafe abortion. Contributing factors include: treatable morbidities such as maternal anemia, teenage marriage and close spacing; high parity; low literacy rate, particularly among women; limited access to quality health services (particularly in the rural areas); cost of services; cultural influences.

2. There is a very high neonatal mortality rate 43/1000 and high perinatal mortality rate 60/1000 (Oyo State Survey).
3. There is a high prevalence of neonatal tetanus in certain areas of the country stemming from low tetanus toxoid immunization coverage and unclean birthing practices.
4. There is a general decline in the utilization of government maternal health services, reportedly due to the recently imposed fee schedule and also, a reported rise in the popularity of the fundamental churches. It is unclear as to the factors which influence the decisions regarding utilization of traditional or formal maternal care services or the client's preference for provider (trained or untrained)--for which problems and at what time.
5. There is a large discrepancy between attendance at antenatal clinic as compared to delivery services. Only about 10% of the population using government antenatal services use delivery services, preferring to deliver at home, with a TBA or in a prayer house.
6. Clients arrive for delivery or immediately postpartum in very unstable condition, on many occasions close to death, particularly those who have received no antenatal care.
7. There appears to be a lack of awareness or knowledge on the part of the woman and her family about the problems arising during pregnancy as well as the appropriate responses to the problems. There is a need to upgrade community knowledge and there is also a need to upgrade health providers skills and knowledge in providing client education and counseling.
8. There is a need to upgrade health provider skills at the community and secondary levels to recognize and respond appropriately to obstetrical emergencies. Health workers at all levels have not had periodic continuing in-service education and thus appear to have fallen behind in currency and quality of clinical practice. Health providers at all levels need basic supplies and equipment (and a system of maintenance) to carry out essential maternal and neonatal care services.
9. There are persistent problems related to early and exclusive breastfeeding. There is a general delay in initiation (> 6-24 hours) and early supplementation (during the first hour of life) with sugar water plain water.

B. Conclusions

Based on the findings of this three week assessment by the MotherCare team under the direction of the FMOH, it is clear that there is a recognition of the problems as outlined above and that there is a political will on the part of the FMOH and the State and local governments to address and reverse the causes of maternal and neonatal mortalities and morbidities. It is also apparent that the existing PHC infrastructure is capable of addressing the

problem if additional technical assistance, in specific areas, was infused into the system as a complement to existing efforts to strengthen the PHC system and to upgrade the skills and knowledge of TBAs, CHEWs, midwives and CHOs. Based on the magnitude of the problem and the current capabilities in Nigeria, the time has come to expand the focus of child survival and family planning efforts to include a broader focus on the health and nutrition of the mother and the neonate. Non-government organizations and donor agencies are supporting activities directed towards raising awareness and social consciousness about the issues of safe motherhood. Projects such as the Nigerian Family Health Services and the CCCD Projects are spending efforts and resources to build capacities in health information and distribution systems and health education and community mobilization processes.

C. Recommendations

Therefore, in consideration of the problems and the causes of maternal and neonatal mortality in Nigeria and the apparent needs and existing capabilities of the PHC system to address the problems, the MotherCare Project proposes to offer the FMOH/PHC Unit, an infusion of technical assistance in three discrete but interactive areas: **diagnostics, health provider training, and interventions geared towards strengthening information, education and communications (I.E.C.)**. It is also recommended that the technical assistance provided by the MotherCare Project be focused in four States (ideally one from each zone). This concentration would enable a closer operational view of complementary components working in concert to improve the situation, such as record keeping (community-oriented Home Based Mothers' Records) and the referral process. In order to maximize technical capabilities and the resources of other projects, it is further recommended that thought be given to introducing maternal care interventions in some of those States where such projects (NFHS, CCCD) are operational. For example, there could be very efficient to utilize State level teams who are already trained in the I.E.C. processes family planning initiatives as conduits for maternal care I.E.C. activities. Also it would be useful to look at the health information system established by the CCCD Project to assess the potential of further expansion to include maternal care data.

VI. FOLLOW-UP ACTION

MotherCare gave a debriefing session for representatives from the FMOH and USAID. Potential areas of support through MotherCare were discussed and agreed upon in principle (as outlined in the attached proposal). Specifically it was agreed that MotherCare consider and address the following activities in the proposal:

- Diagnostics to include case/control study and utilization survey which will be conducted by local university through direction of FMOH;
- Assistance in analyzing breastfeeding situation in tertiary centers and assist the FMOH in the development of an action plan to promote breastfeeding;
- Assist the FMOH with their priority to adapt the WHO recommended Home Based Mothers' Record for use in Nigeria;
- Assist the FMOH in the design of training needs assessment, task analysis instruments for assessing the skill and knowledge level of TBAs and CHEWs. Also, assist the FMOH in the technical review and possible revision of the existing curricula for the TBAs and CHEWs;
- Assist the FMOH in the review and perhaps revision and update of the existing protocols governing midwife, CHO and CHEW practices in maternal care;
- Conduct "Life Saving Skills Training" courses for midwives and CHOs;
- Conduct I.E.C. Campaign and Training of State Health Education teams in 4 States; and
- Assist FMOH with increased focus on maternal nutrition. It was mentioned that MotherCare could assist in a community-based study but details were not defined. Further suggestions have been made in the proposal.

It was agreed that MotherCare would write the first draft of the proposal and submit the draft to the FMOH/PHC Unit for their review, additions, deletions. To ensure that this proposal represents the views of the FMOH and the MotherCare capabilities, it would be advantageous for Dr. Adeyemi to travel to the U.S. in July to work with the MotherCare team to finalize the proposal. The first draft of the proposal has been completed with this report and will be sent to Nigeria (the week of May 20th) through USAID for distribution to the FMOH.

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