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THE INITIATIVE OF THE UNIVERSITY OF GEZIRA: SAFE MOTHERHOOD& CHILDHOOD GEZIRA STATE 2005 - 2010

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On the 19th Feb 2004 the Vice Chancellor (VC) of the University of Gezira released the initiative of the University of Gezira (UG) during the obstetrical and gynecological society conference. The initiative aims to reduce the maternal mortality ratio (MMR) and the neonatal mortality rate (NMR) in the Gezira State by 50% within five years 2005-2010. That was followed by a strong statement by the Gezira State Wali (Governor) supporting the initiative. Immediately after the conference the VC formed a committee to design, implement and evaluate the project. The committee included representatives of the UG, State Ministry of Health, the department of peadiatrics and the department of community medicine of the Faculty of Medicine University of Gezira (FMUG). The committee prepared the project draft which was presented in a national workshop organized by the Educational Development and Research Centre (EDC FMUG) on 23.9.2004 under the patronage of the Gezira State Wali. The workshop approved the project in its final version. During the workshop the objectives, strategies and methods of evaluation were made known to all stakeholders. The project is now in the implementation phase and the preliminary results are encouraging.

SAFE MOTHERHOOD AND CHILDHOOD PROJECT, GEZIRA STATE
2005-2010

1. The Objective of the project is to reduce the MMR and NMR in Gezira state by 50% within five years 2005-2010.

2. Justifications:
All scientific studies about maternal mortality (509 per 100.00 life birth) and neonatal mortality (29 per 100.00 life birth) local, regional and international showed that the MMR and NMR in Sudan are high and not acceptable. Those high rates rank high among the issues of public concern and hence the UG is committed to respond to them.
A large number of pregnancies become complicated in various degrees during pregnancy, labour or the puerperium. Those complications are not always predictable and may threaten the lives of mothers or cause long life disabilities. They also directly affect the newborn babies. The majority of obstetric complications are difficult to prevent; placenta previa, pre eclampsia, malpresentations and malpositions etc. However the mortality and morbidity from those obstetrics problems could be reduced by early diagnosis during ante-partum period and provision of appropriate and skillful management. Apart from simple medical problems like malaria and respiratory tract infections almost all the obstetric complications require hospital treatment. Most studies showed that maternal deaths usually occur in hospitals. The central issues in the prevention of maternal and neonatal deaths are; antenatal care (ANC), intrapartum care, care during the puerperium, care of the newborn and breast feeding.

Antenatal care (ANC): has three components; screening for risk factors and referral, disease detection, treatment, prevention and health education. ANC is normally provided at the primary health care (PHC) level. In recent years the role of ANC in determining the pregnancy outcome has come under increasing

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scrutiny and doubts are raised as how relevant it is. However it remains one of the essential interventions in reducing MMR and NMR , only if it is supported by a well equipped and efficient system of intra- partum care. The state Ministry of Health (State MOH) reports showed that the coverage and quality of ANC services in Gezira State are quite satisfactory.

Intra partum care: In Gezira State the thrust of intrapartum care falls on the village midwife (VMW) - home deliveries- where more than 80% of deliveries take place. The VMW is responsible for conducting normal deliveries and for taking care of normal newborn babies. She is expected to refer all complicated cases to the first referral level- the Rural Hospital- which provides emergency management for obstetric complications. It is reckoned that one out of every 10 pregnancies requires operative delivery and emergency management. Without the first referral level a reduction in MMR and NMR can never be achieved since all obstetric complications need hospital care.

The ability of intra- partum care to support ANC and reduce MMR and NMR heavily depends on two components; trained personnel (midwives and doctors) and well equipped facility (rural hospital) in which complications could be managed. The rural hospital normally serves a specific catchments area, supervises and supports PHC units around it and provides training for PHC personnel. In order to meet all its responsibilities it should have adequate facilities; enough trained personnel, continuous flow of essential supplies and correct records. The current situation of the VMWs and the rural hospitals is far below the optimum standards and hence the Safe Motherhood Project emphasizes the upgrading of the intra-partum care as the most effective strategy in reducing MMR and NMR.

Neonatal care: the principles involved in neonatal care are: neonatal resustation, umbilical cord care and establishment of breast feeding. Neonatal care should be fully integrated in inta-partum care.

Based on the information obtained from the MOH records, the results of scientific studies, the community surveys and the opinions of experts, the project committee identified the intra-partum care as the most effective strategy in reducing MMR and NMR and hence the design of the project was tailored towards the upgrading and strengthening of the rural hospital and the VMW through (i) rehabilitation of rural hospitals (ii) appropriate training (iii) supervision (iv)continuous monitoring and periodic evaluation

3. OBJECTIVES:

The objectives of the project were derived from the results of the assessment of the current situation of the reproductive health services in Gezira state. Those results indicated clearly that the intrapartum care suffers from a lot of deficiencies and hence there is emphasis on the intrapartum care; however the project also aims to upgrade the ANC.

The safe motherhood and childhood project aims to:

3.1 rehabilitate all labour rooms and operative theatres in all hospitals in the state; provide optimum services of sterilization, anesthesia and blood replacement in all hospitals in the state.
3.2 establish neonatal care units in all tertiary level hospitals
3.3 employ at least one obstetrician specialist in each rural hospital
3.4 allot at least one VMW in each village or camp
3.5 provide each VMW with a complete delivery kit.
3.6 ensure continuous flow of essential supplies for village midwives
3.7 post all village midwives in permanent governmental paid jobs.
3.8 provide village midwives with manuals and management protocols.
3.9 review and develop the village midwives curricula
3.10 rehabilitate old village midwives schools and establish new schools
3.11 increase the number of students midwifes.

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3.12 ensure that the auxiliary staff is complete in each hospital; anaesthetic technician, theater attendant, laboratory technician, statistics technician and a dietician.
3.13 organize in-service-training course for midwives and doctors in obstetrics and neonatology.
3.14 provide a text book of midwifery for midwives schools
3.15 prepare manuals and protocols for midwives and doctors.
3.16 provide continuous flow of essential drugs for rural hospitals and village midwives.
3.17 establish intensive care units in tertiary hospitals
3.18 upgrade ANC coverage and quality
3.19 strengthen the supervision and referral systems at the level of PHC and adopt the high risk approach in ANC.
3.20 develop and modernize the records system(health information system) and establish a data base of pregnancy and its complications
3.21 keep a record of all maternal and neonatal deaths
3.22 monitor the project continuously and evaluate it periodically.
3.23 conduct scientific research; biomedical, technological, epidemiological, operational, basic sciences and social sciences.

4 .PROJECT DESIGN

Based on the project objectives 10 areas of interventions were identified:

4.1 village midwife
4.2 labour room and theatre
4.3 intensive care
4.4 blood replacement
4.5 neonatal care
4.6 training
4.7 antenatal care.
4.8 protocols for management of obstetrical & neonatal emergencies and manuals
4.9 health education
4.10 evaluation.

Each area was assigned to a group of experts who set the optimum requirements needed for each area to achieve the objective of the project: reduce the MMR and NMR by 50%. The VMW group estimated the minimum coverage required, determined the contents of a standard village midwife kit, designed the effective methods of supervision of VMWs and identified clearly the job description of the VMW. The groups who worked on the areas of labour room, theater, intensive care unit, and blood replacement prepared standard lists of required facilities in those units. The neonatal care group designed a practical model of neonatal care at the levels of home, rural hospital and tertiary hospitals. The training group formulated a plan to review and develop the curricula of midwives. They also set a comprehensive programme of regular in-service training courses for midwives and doctors in order to upgrade their abilities and skills. The group identified the protocols, manuals and text books needed and how those materials could be prepared and provided to doctors and midwives. The ANC group prepared a practical model of ANC and referral system at the level of PHC. The health education group identified the contents of health education in reproductive health (RH) in general and how those contents could be delivered. The evaluation group designed a practical scientific model for the monitoring and evaluation of the whole project. The model includes the 4 main indicators; inputs, processes, outputs and impact (reducation in MMR and NMR). It also includes a comprehensive system of registration and reporting at all levels. The model identifies the priority areas of

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research relevant to maternal mortality and neonatal mortality. The model describes clearly how the MMR and NMR will be estimated each year.

The products of all the expert groups were reviewed, edited and finalized as DETALLED standard lists and models:

The standard rural hospital and its essential functions, rural hospital labour room, rural hospital theater, specialization hospital labour room, specialization hospital theater, rural hospital personnel, specialization hospital personnel, specialization hospital intensive care unit, specialization hospital neonatal care unit and its personnel, blood replacement facilities in a rural hospital, blood bank in a specialization hospital, protocols of management of obstetric emergencies, ANC model, referral system, health education model, training programmes (basic and in-service), VMW kit, system of supervision, neonatal care model at PHC level and rural hospital, project evaluation model.

Then the obstetric resources in all the state hospitals were assessed by direct observational visits conducted by a team from the EDC, the team was led by a medical doctor. Information about the situation of VMW in the state was obtained from the state MOH. The needs of training for doctors and midwives and other relevant health professionals were also obtained from the state MOH. Then it was possible for the committee to determine the actual needs of the midwifery service in the state, by comparing what was really available to the standard lists and models and consequently the deficiencies were quantitatively determined and listed. Then all the project requirements were costed and a 5 years budget was estimated; 5 millions US dollars.

5. STRATEGIES

The following strategies are adopted to enable achieving the project objectives:

5.1. Formation of a project committee chaired by the VC of the U G. The Committee includes representatives of the state government, the state MOH, the federal MOH, the U G and all relevant institutions and organizations. The committee is responsible for the whole project and uses the EDC FMUG as its focus coordinating all its activities.

5.2. Obtaining political commitment, the state wali, the state government and the State MOH.

5.3. Full partnership with the state MOH at all stages of the project; planning, Implementation and evaluation. The project is included in the annual plans of the state MOH and is implemented within the general policies of the Ministry.

5.4. Publicizing the project and making it known to the public and relevant sectors of the community.

5.5. Full collaboration with all national professional societies; obstetrics and gynaecology, peadiatrics, community medicine.

5.6. Including the issues of maternal and child health in the scientific research priorities conducted by academic staff and students.

5.7. The project shall be implemented in phases. A plan of action shall be set for each year 2005-2010.

5.8. The project shall be sponsored mainly by the government of Gezira state, other governmental and non- governmental organizations.

6. FINAL VERSION OF THE PROJECT

Finally the project draft was presented in a national workshop organized by the EDC FMUG under the patronage of the Gezira State Wali. The workshop was attended by representatives from UG, state MOH, federal MOH, WHO, UNICEF, UNFPA, all medical specialists in Gezira State and all medical officers in charge of the state rural hospitals. Representatives of the midwives were also among the attendants. By the end of the workshop the awareness of all participants about maternal and neonatal mortality was significantly

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raised. The participants were impressed by the project objectives, design and strategies and there was agreement among them that the project would help in reducing the MMR and NMR in the state. They also promised to publicize the project and support it. The workshop approved the project and the Gezira State Wali stated that he and his government would adopt the project and support it at all its stages.

7. IMPLEMENTATION

Following the approval of the project by the national workshop the project committee started the implementation. As a result of the publicity of the project and its convincing objectives and strategies many organizations and institutions showed interests in participating in it. However the most important effect of the publicity was the remarkable mobilization of the community. There is now significant community participation in all developmental activities concerning maternal and child health care and that lends a big support to the project. In the year 2005 there was no clear plan of action, yet some progress was made. A clear detailed plan of action for the year 2006 was set and is now under implementation. The plan includes; introducing the project to the government of the Gezira state, publicizing the project among the public and health professionals, rehabilitation of the obstetric units in hospitals, training of midwives and doctors, provision of text books for midwives schools and manuals for midwives, supervision of maternity services and evaluation of the project. Following are some of the project achievements till 30 Jun 2006:

7.1. The Government of Gezira State adopted the project

The project committee is aware that the issues of maternal and child health rank high among the priorities of the community at large and hence political commitment is vital for the success of the project. The committee was able to obtain that political commitment by introducing the whole project to the council of ministers of the government of the Gezira state during one of its regular meetings, 13/5/2006. The government approved the project and endorsed it in its annual plans and decided that it should be one of its constant agenda and that the project committee should present a progress report to the council of ministers every month. The government also approved the proposal of the project committee of founding the state Network of Safe Motherhood and Safe Childhood. The network is chaired by the wali and includes the VC UG, the state Ministry of Health and representatives of the federal MOH,WHO,UNFPA and others relevant sectors. The network shall coordinate the contributions of all partners, develop linkages with the federal government and non-governmental organization and raise funds for the project. During that meeting the council of ministers recommended the employment of all VMW in the state in permanent governmental jobs. The council also approved the employment of obstetrician specialists in all rural hospitals. The project benefited a lot from the political commitment; the commitment made the implementation rather smooth without hindrance at any governmental administration.

In the context of full partnership with the State Government the Vice Chancellor and the State Minister of Health visited the UNFPA and were able to obtain full support to Managil Locality.

7.2. Rehabilitation of the state hospitals.

The rehabilitation was based on the standard lists adopted by the project. It rectified approximately 5-10% of the deficiencies already identified. It included mainly buildings and essential equipments. Rehabilitation of hospitals was financed by the state government, in addition to a very significant participation of the local communities.

The following table shows a summary of the development in 23 hospitals:

NO.	HOSPITAL	BUILDINGS	EQUIPMENT

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1.	Wad Medani Tertiary	-Outpatient clinic, emergency clinic, small theatre, bleeding wards (founded) -New obstetric ward (under construction)	- 4 autoclaves, 4 operating tables, 4 anaesthetic machines, suckers, monitors, delivery tables, 4 hot ovens, blood bank refrigerator, surgical instruments - 3 cars, electric generator
2.	Tabat (rural)	Obstetric complex; labour room, theatre and ward (founded). children ward (founded)	- delivery table, anaesthetic machine, ceiling lamp& sucker .
3.	El Huda (rural)	-New theater (under construction) -Rehabilitation of labour room	Anaesthetic machine, hot oven
4.	Azazi (rural)	New theater (under construction)	-
5.	AbwGuta (rural)	Rehabilitation of labour room	-
6.	Gorashi (rural)	-	X-ray machine, ECG machine
7.	Hosh (rural)	-	Delivery table, hot oven
8.	Um El Gura (rural)		Delivery table, delivery instruments
9.	Meailig (rural)	-	Delivery table, hot oven
10.	Kamlin (rural)	-	Ambulance
11.	Mehairiba (rural)	Rehabilitation of labour room + theater	Hot oven
12.	Tikina (rural)	Rehabilitation of theater	Delivery table, obstetric instruments.
13.	Fatir (rural)	Rehabilitation of theater	Delivery table, obstetric instruments
14.	Ribi (rural)	New obstetric ward (founded)	-
15.	Haj Adbulla (rural)		Obstetric instruments, delivery table, anaesthetic machine
16.	Alti (rural)	-	Delivery table, hot oven
17.	Wad Rawa (rural)	-	Delivery table
18.	Tambool (rural)	Obstetric complex; labour room, theater ward (founded)	Complete set of obstetric and anaesthetic equipment. Autoclave, anaesthetic machine, delivery table, operating table,
19.	Wad Haboba (rural)	-	Obstetric instruments
20.	Gifar (rural)	-	Delivery table, hot oven

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21.	Wad Adam (rural)	-	Obstetric instruments
22.	Gamosi (rural))	-	Delivery table, hot oven
23.	Hasaheisa (province)	New obstetric complex; labour room, theater, ward (under construction)	Autoclaves, ovens, anaesthetic machines, surgical instruments blood bank

7.3. Manpower

Employment of:

- 13 obstetrician specialists in 13 rural hospitals (EL Huda, Um El Gura, Rufaa , Tambool, Alhddad, Giad, Abo Gota, Al Genaid, Al Helalia, Al Azazi, Tabat, Kamlin and Al Hush)
- 9 theater attendants (Hasaheisa, Medani, Tabat, Fatir, Kamlin, Arbagi, Giad, Um El Gura, Abo Gota)
- 6 anaesthetic technicians (Medani, Tabat, Kamlin, Um El Gura, Abu Guta, Hosh)
- 5 midwives in Medani Hospital
- 1 Anesthesia specialist in Medani Hospital

7.4. Training

7.4.1 Basic training

- Graduation of 45 villages midwifes (VMWs) Managil School. Provision of 45 delivery kits
- Graduation of 20 nurse midwives Medani Hospital
- Admission of new batch-Wad Medani (village midwifes) VMW school 58 students.

7.4.2 In service training

- Training course: Post Abortion Care (PAC) - 17 doctors
- Training course in the management of obstetric emergencies 11 medical officers working in rural hospitals
- Training course in the standard management of obstetric emergencies- 14 health visitors
- Training course: Advanced Life Support in Emergency Obstetrics (ALSO)
- 6 obstetricians - Training course: Advanced Life Support in Emergency Obstetrics (ASLO) 5 instructors

8. SUPERVISION

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The project has a plan of supervision of the maternity and child health services at the level of PHC and first referral level-rural hospital. The supervision is normally conducted by a team of senior midwives who visit all VMW, PHC units and rural hospitals. They evaluate the services according to standard guidelines. During those visits problems and deficiencies are identified, and reports were prepared and forwarded to the RH administration. In the year 2005,2006 supervisory visits covered; 18 rural hospitals(Wad Adam, Gorashi, Gamosi, Matoury, Azazi, El Huda, Maelig ,Alti, Abu Guta, Tabat, El Hadad, El Hosh, Madina Arab, Um El Gura, Gifar, Furgan, Sharafa), all VMW in the catchments areas of those Hospitals, 12 health centers(Tayba, Gitra, Kamil Numak, Kab El Gidad, Bagir, Barakat, Baika, Shabarga, Banat, Dibaa). The information obtained was analyzed and included in the evaluation of the project and its future plans.

9. MONITORING AND EVALUATION

9.1 The progress of the project was monitored and evaluated by; (i) supervisory visits, (ii) monthly reports from the PHC units and rural hospitals, (iii) registration charts from PHC units, village midwifes (VMW) , Rural Hospitals and Specialization Hospitals, (iv) regular meetings of the reproductive health administration State MOH and regular meetings of the project committee. The evaluation was based on the plan of action 2006. A satisfactory progress was made in the rehabilitation of obstetric facilities as mentioned above. Following are some of the reproductive health indicators of the whole State in nine months from 1.1.2006 to 30.9.2006. (Reference: Records of Ministry of Health Gezira State

Reproductive Health monthly report of village midwives and Rural Hospitals)

Total number of deliveries (home & rural hospitals) = 19108

Home deliveries = 14315 (75 %)

Hospital deliveries = 4793 (25 %)

Normal deliveries = 2850

Forceps deliveries = 262

Caesarean section = 1111

Number of maternal deaths = 30

Maternal mortality rate = 157 deaths / 100000 live birth

Perinatal deaths = 228

Perinatal mortality rate = 11.9 /1000

Neonatal deaths = 261

Neonatal mortality rate = 13.7 / 1000

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Wad Medani Obstetric Teaching Hospital: (Ref: Records of Hospital):

Total number of deliveries	= 4516
Total number of deaths	= 19
Maternal mortality rate	= 420 deaths / 100000 live birth
Antenatal care (ANC) coverage	= 55.4%

10. CONCLUSIONS

The project objectives are feasible and the strategies are effective. There is a remarkable reduction in MMR from 496 to 189.2 and in NMR from 21 to 13.5. The main problems which face the project are; shortage in manpower especially obstetrician specialists, rapid movement (turnover) of medical officers, difficulties of supervision of VMW and the high cost of equipments