

MAKING "SAFE MOTHERHOOD" A REALITY:

REPORT ON YEAR 2

Principal Investigators:

Allan Rosenfield, M.D.

Deborah Maine, Dr. P.H.

Averting Maternal Death & Disability (AMDD) Program
Joseph L. Mailman School of Public Health
Columbia University, New York

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EXECUTIVE SUMMARY

The basic fact of maternal mortality is that most life-threatening obstetric complications cannot be predicted or prevented, but they can be treated. Therefore, the core of the AMDD program is the improvement of the availability, quality, and utilization of emergency obstetric care (EmOC). To reach this goal, however, involves much more than medical training and equipment. While these are absolutely necessary elements of our program, we need to also understand and address the context in which services are (or are not) being provided. Thus, our program is also about changing systems – in facilities, health systems, and international agencies. To move this agenda forward, we have developed a program that has a number of components, including:

- Forging partnerships;
- Building program models;
- Applying human rights principles;
- Measuring progress;
- Promoting leadership;
- Fostering a global network;
- Promoting replication; and
- Distributing information

In this report, we describe the many activities that have been completed or are underway at the end of the second year of AMDD.

Forging partnerships: We have enlisted a strong set of project partners who have the capacity to influence policies and implement programs around the world. It is encouraging to see the commitment, energy and creativity with which they are implementing their projects and beginning to build improving EmOC into their own organizational agendas. Moreover, there is a growing perception among our partners and other agencies that EmOC is a good entry point for addressing broader structural deficiencies in health systems.

Building program models: A large number of field projects to improve EmOC (51) have been started. The major projects are those with UNICEF (6), UNFPA (4), CARE (5), and Save the Children (2). Together, these projects encompass a wide range of situations, so the lessons to be learned from them will be applicable globally.

Applying human rights principles: In AMDD, we are going beyond the use of human rights as an advocacy tool, and developing ways to use human rights principles to support and strengthen projects – to improve their quality, effectiveness and sustainability. One of the exciting parts of our program over the next few years will be to see these activities mature.

Measuring progress: The “UN Process Indicators”, which were developed by Columbia staff in collaboration with UNICEF and WHO, are the overall yardstick by which progress in the projects will be measured. These measure the availability and utilization of EmOC. Needs assessments have been completed for all of the 51 field projects mentioned above. In addition, UNFPA has assisted 5 Francophone Africa countries to do national needs assessments.

Promoting leadership: We are promoting and rewarding leadership in this field in a number of ways. Through our “Leadership Fund”, we are giving grants to small NGOs who provide life-saving care to pregnant women in underserved areas. This fund is supported by the interest income on our Gates grant. We also initiated a series of “Distinguished Community Service Awards” through FIGO. Finally, we foster leadership in future generations of public health professionals by our teaching at Columbia University, and our guest lectures in other schools.

Fostering a global network: The major activity in this regard was our first annual AMDD Project Workshop, which was held in Marrakech in February 2001. We brought our technical team, project partners and their government counterparts – more than 100 people in all— to discuss their activities, interests and accomplishments. The participants found the workshop informative and energizing.

Promoting replication: Replication of AMDD approaches and projects is proceeding faster than we had expected. Already, AMDD models and methods are or will be used in projects in India, Mozambique, Niger, and Peru.

Distributing information: This year we developed an AMDD website and newsletter, and arranged to have the *International Journal of Gynecology and Obstetrics* publish 100 pages a year on programs to improve the availability and quality of EmOC. Several of our partners have also published major reports this year with AMDD funding.

In summary, a sizeable number of field projects to improve EmOC— the core of the program— are underway. In addition, we are moving forward with the components of our program that promote systems change, such as network building, developing the human rights approach, fostering leadership, and documentation.

1. INTRODUCTION

One woman dies of pregnancy complications every minute of every day. Because the knowledge and resources to greatly reduce this toll have existed for decades, this is not just a tragedy, but a violation of human rights principles, as well. Indeed, it is not accurate to say that this serious problem is “neglected” because there has been an international Safe Motherhood Initiative since 1987. This initiative helped focus attention on the problem, but accomplished relatively little in terms of programs that save women’s lives.

The Averting Maternal Death and Disability (AMDD) Program at Columbia University’s Mailman School of Public Health was founded, with generous support from the Bill and Melinda Gates Foundation, to help fulfill the promise of the Safe Motherhood Initiative. In order to do this, we intend to promote a global movement focused on saving the lives of women who have obstetric complications.

To move this agenda forward, we have developed a strategy that has a number of components, including:

- Forging partnerships;
- Building program models;
- Applying human rights principles;
- Measuring progress;
- Promoting leadership;
- Fostering a global network;
- Promoting replication; and
- Distributing information

In this report on our second year, we will discuss our progress in each of these areas, as well as plans for the coming years.

1. FORGING PARTNERSHIPS

If maternal mortality is to be substantially reduced in the next decade, effective programs must be implemented on a large scale in many developing countries. This means that a number of large international organizations must not only adopt the reduction of maternal mortality as one of their primary goals, but they must adopt a more focused strategy for solving this problem, and they must assist governments to implement effective programs. We designed the AMDD Program with this global agenda in mind.

Thus, rather than developing projects ourselves, we are encouraging, guiding and supporting major international organizations to do so. We have established both project and technical partnerships. Project partners are agencies with extensive experience and infrastructure to support field projects. During the first year, we signed agreements with five such agencies: UNICEF, UNFPA, CARE, Save the Children, and the Regional Prevention of Maternal Mortality (RPMM) Network. Since our last report, we have added one more project partner, the Reproductive Health for Refugees (RHR) Consortium.

Technical partners are individuals and/or agencies that have expertise in an important program element, such as monitoring and evaluation, management issues, training, or project documentation. To date, they include Barbara Kwast, Family Health International (FHI), John Snow International (JSI) UK, Engender Health (formerly AVSC), the Indian Institute of Management in Ahmedabad (IIMA), and the International Federation of Gynecologists and Obstetrics (FIGO).

We believe that building our program on partnerships has a number of benefits, including increasing efficiency, economy, experience, creativity, replicability and sustainability.

2.1 Efficiency & Economy

If we had elected to work directly with governments to design and implement projects, we would have needed to build up an entirely new infrastructure at Columbia University, hire a large number of staff, open offices in countries where we wanted to have programs, and negotiate agreements with governments in order to carry out the projects. This would have consumed not only a large proportion of the 5-year grant period, but a substantial proportion of the \$50 million, as well.

Instead, we have a small staff at Columbia and involve technical partners. (See Appendix 1.) We are working with project partners that already have country offices, field staff and agreements with governments into which AMDD-supported projects can fit. As a result, in less than two years, projects are underway in dozens of countries.

2.2 Experience & Creativity

By working with partners we add their experience and talents to those of our staff and consultants. For example, during a recent field trip to UNICEF and UNFPA projects in Rajasthan, India, it was clear that each agency was bringing a wealth of expertise and knowledge to their project. The UNFPA staff had extensive experience with renovation of facilities and purchase of equipment, whereas the UNICEF staff had experience with using the “appreciative inquiry” technique in mobilizing hospital staff to improve the functioning of the facility and the quality of care. Moreover, the staff of the two projects is sharing their expertise with each other.

2.3 Replicability & Sustainability

If we had taken the usual route, at the end of five years there would have been field projects in perhaps five to seven countries, and these might be referred to as “Columbia University projects”. While that would provide the field with models of ways to improve women’s access to emergency obstetric care, it is not certain that other agencies or countries would adopt these models.

However, because we are working through partners, at the end of the grant period, there will in effect be no “Columbia University projects”. There will be UNICEF projects and CARE projects, and better still, government projects. We believe that this approach greatly increases the likelihood of the projects being replicated and the models being widely adopted. And, in fact, this process has already begun (see section 8 of this report).

The AMDD Program will have a finite life span. What are the mechanisms that will promote ongoing application of the lessons learned in this program? While we expect that governments will adopt many of the lessons learned, the chances of ongoing application will be greatly increased if they are also “owned” by international agencies, such as UNICEF and UNFPA, CARE and Save the Children.

3. BUILDING PROGRAM MODELS

The cornerstone of the AMDD Program is our understanding of how to reduce maternal deaths in developing countries. In 1986, Columbia staff wrote an official background paper for the first Safe Motherhood Conference, which was held in Nairobi the next year.¹ This paper was based on a thorough review of the world literature, and what that review revealed can be summed up in two sentences:

Most life-threatening obstetric complications cannot be predicted or prevented, but they can be treated. Therefore, all pregnant women need access to emergency obstetric care (EmOC).

In 1987, this analysis of the problem and potential solutions was controversial. Today, it is widely accepted. The challenge now is to put this knowledge to work.

There are many factors that can act as barriers to women receiving life-saving care, ranging from the absence of key supplies or staff, to poor roads and long distances, to mistrust of the health care system by the community. In 1990, we developed a simple model called “The 3 Delays” which sorts into three categories the factors that hinder treatment in obstetric emergencies and increase the likelihood of maternal death.² They are:

1. Delay in deciding to seek care
2. Delay in reaching a treatment facility
3. Delay in receiving adequate treatment at the facility

Many maternal mortality programs focus on Delays 1 and 2, even though it is crucial to address Delay 3 first. If facilities cannot provide prompt, adequate emergency services, women reaching the hospital will still die. It would also be unethical to advocate for women to seek these services where they are not available or are below acceptable standards. Therefore, AMDD-supported projects begin by focusing on Delay 3. Once services have been made available, the projects then address other delays.

To date, 55 AMDD-supported projects have started in 40 countries, as Table 1 shows. For more detailed descriptions of each project, please see the “Project Snapshots” in Appendix 2.

¹ D. Maine, A. Rosenfield, M. Wallace, A.M. Kimball, B. Kwast, E. Papiernik and S. White, Prevention of Maternal Mortality in Developing Countries: Program Options and Practical Considerations, Official background paper for the International Safe Motherhood Conference, Nairobi, Kenya, February 1987.

² S. Thaddeus and D. Maine. Too Far to Walk: Maternal Mortality in Context. Columbia University, Center for Population and Family Health, New York, 1990.

Table 1: Country Projects and Partners

<u>Country</u>	<u>Organization</u>	<u>Country</u>	<u>Organization</u>
Angola	RPMM	Mauritania	UNFPA*
Bangladesh	UNICEF	Morocco	UNFPA
Benin	RPMM	Mozambique	UNFPA
Bhutan	UNICEF	Nepal	UNICEF
Bosnia	RHR	Nicaragua	UNFPA
Burkina Faso	RPMM	Nigeria	RPMM
Cameroon	Leadership Fund	Pakistan	RHR
	UNFPA*		UNICEF
Chad	RPMM	Peru	CARE
Congo	RHR	Rwanda	CARE
Cote d'Ivoire	RPMM	Senegal	RPMM
	UNFPA*		UNFPA*
Ethiopia	CARE	Sierra Leone	RHR
Ghana	RPMM		RPMM
Guinea	RPMM	Sri Lanka	UNICEF
India	Leadership Fund	Sudan	RHR
	UNFPA	Tajikistan	CARE
	UNICEF	Tanzania	CARE
Kenya	RHR		RHR
	RPMM		RPMM
Kosovo	RHR	Thailand	RHR (2)
Lesotho	RPMM	Togo	RPMM
Liberia	RHR (2)	Uganda	RPMM
	RPMM	Vietnam	Save the Children
Mali	RPMM	Zambia	RPMM
	Save the Children	Zimbabwe	RPMM

* National Needs Assessment Only

These projects have started at different times and are therefore at different stages. In some of our agreements with our project partners, two phases of activities are defined: Phase 1 is the needs assessment and project design (6-12 months); Phase 2 is project implementation (2.5 – 3 years). Phase 2 begins when the project design is accepted by AMDD. During this project year, we entered Phase 2 of three of our major partnerships: with UNICEF in May 2000, and CARE and Save the Children in 2001, as Table 2 shows.

Table 2. Phasing of AMDD Project Partnerships

Project Partner	Countries	Start: Phase 1	Start: Phase 2
UNICEF	6	11/99	5/00
UNFPA	11	4/00	N/A
CARE	5	4/00	3/01
RPMM	19	6/99	N/A
Save the Children	2	4/00	3/01
RHR Consortium	12	10/00	N/A

Our agreements with UNFPA, RPMM and RHR did not specify separate phases because of the nature of the projects. With UNFPA this is because we are supporting a variety of activities, including not only substantial field projects in four countries, but national needs assessments (see section 5) and a distance learning program (see section 9). With RPMM, our funds are used to support a pan-African network of multidisciplinary teams – the regional office in Accra, start-up grants for teams, and inter-country training and workshops. The teams raise funds for their intervention projects from other sources. Finally, our support to the RHR Consortium is funding relatively small projects carried out by four member organizations of the Consortium – the American Refugee Committee, International Rescue Committee, Marie Stopes International, and the Women’s Commission for Refugee Women and Children.

Some of the projects that are farthest along are, not surprisingly, those in countries where Columbia staff members were already working when the AMDD Program began (e.g. Bangladesh since 1993 and Morocco since 1995). There are, however, other countries in which activities have gotten off to a fast start due to the enthusiasm and commitment of partner staff and government officials, such as Peru, India and Mozambique.

While the projects vary by setting and by partner agency, there are elements that are common to most. All begin with a needs assessment. The design of the project reflects the findings of the needs assessment. Most of the projects include training of personnel, purchase of some equipment, minor or major renovations of the facilities, management interventions, community involvement, and monitoring.

3.1 Training

In AMDD, our emphasis is on improving the utilization of existing resources, including staff. In many countries, health personnel are not trained to perform all the life-saving procedures for which they are qualified. For example, in some countries, physicians and midwives are not trained to do even non-surgical EmOC procedures, such as manual removal of the placenta and assisted vaginal delivery. In many countries, what training physicians do receive in obstetrics is cursory, with little hand-on experience involved. Consequently, in most of the projects some training or re-training is being done. Table 3 shows some of the training that was done last year.

Table 3. AMDD-Supported Training, June 2000-May 2001

COUNTRY	DESCRIPTION OF TRAINING
Bangladesh, UNICEF	<p>In 2000:</p> <ul style="list-style-type: none"> • Nurses trained in EmOC • Physicians trained in obstetrics/gynecology and anesthesia <p>In 2001:</p> <ul style="list-style-type: none"> • Physicians being trained in obstetrics/gynecology, and anesthesia • Nurses undergoing training in EmOC
Bhutan, UNICEF	<ul style="list-style-type: none"> • Training of stakeholders and community leaders • Training of health management teams • Training of health workers for early detection of complications and referral
India, UNICEF India, UNFPA	<ul style="list-style-type: none"> • Workshop on Appreciative Inquiry (a management tool) • Training in basic EmOC • Training in basic EmOC
Nepal, UNICEF	<ul style="list-style-type: none"> • Workshop on Appreciative Inquiry (a management tool)
Pakistan, UNICEF	<ul style="list-style-type: none"> • Doctors and nurses trained in infection prevention • Training of general physicians in project area • Training of drivers for transportation of emergencies
Sri Lanka, UNICEF	<ul style="list-style-type: none"> • Workshop on process indicators
Morocco, UNFPA	<ul style="list-style-type: none"> • Workshop on process indicators held in 5 regions
Cameroon, Hospital EPC de Metet, LEADERSHIP FUND	<ul style="list-style-type: none"> • Midwives currently being trained
India, Asha Kiran Hospital, LEADERSHIP FUND	<ul style="list-style-type: none"> • Nurses currently being trained

3.2 Equipment:

In many projects, some additional equipment is needed in order for staff to provide good quality EmOC. To ascertain needs, we provided lists of equipment and supplies for our partners to use in their needs assessments. The lists of surgical equipment and drugs were based on these published by WHO.³ Purchasing equipment is a fairly lengthy process in developing countries, but most of our partner agencies are experienced in this and can facilitate it.

3.3 Renovations:

Many of the government hospitals and health centers in which the projects are taking place are in need of some repairs in order to function well. Some examples of the kinds of repairs that AMDD is supporting are the following:

- Leaking pipes are being repaired in a hospital in a drought-prone area;
- Haphazard, dangerous wiring in hospitals is being repaired;
- Women's bathrooms are being installed in facilities that had none; and
- Incinerators are being installed for proper waste disposal.

In Nepal last year, we learned of an architect named David Potter who had worked with the DFID-supported Nepal Safe Motherhood Project on renovations. We were so impressed by his work that we arranged for him to assist some of the UNICEF projects in Asia. The teams were extremely pleased with his assistance.

One of the great benefits of the flexibility that the Gates Foundation permits us is that we can help our partners to do what it takes to make the projects function. This is in contrast to other funders who, for example, will allow their funds to be used for training but not equipment. It is important to note, however, that equipment and renovations do not dominate these projects; they account for less than one-quarter of project funds.

3.4 Management:

One of the lessons that has been learned from the Safe Motherhood Initiative is that training and equipment are often necessary, but not usually sufficient. There are many examples of projects that did not go beyond these interventions and which failed to improve the availability and quality of services. Conversely, improvements in management can solve problems that seem, at first, very daunting. For example, in some countries, the fact that there is no doctor at the hospital, or that there is only one for 6-8 hours a day, does not necessarily mean that there is a shortage of doctors. It may have more to do with management.

We are supporting a number of approaches to improved management of EmOC services, including the following:

- We are working with EngenderHealth (formerly AVSC) to adapt their popular management methodology (COPE) for quality improvement of EmOC. A draft of this material should be ready for testing in the fall of 2001.

³ World Health Organization. Mother-Baby Package: A Road Map for Implementation in Countries. Division of Family Health, Geneva, 1994.

- Dileep Mavalankar is a physician who is on the faculty of the Indian Institute of Management in Ahmedabad, India, and has long been involved in the Safe Motherhood Initiative. He has been a consultant to AMDD since the start, but now he has taken a sabbatical from teaching to work with us 80% of his time. His involvement in the projects will make a valuable contribution to the management component.
- In Rajasthan, Judith Graeff of AMDD and Dileep Mavalankar are working with UNFPA to improve management in the hospitals. They are testing out a system of monthly meetings in each facility to discuss challenges and successes.
- In the six UNICEF projects in Asia, they are using a method called “appreciative inquiry” to improve services. With this system, the hospital staff begins by discussing problems they have solved, in order to set a positive tone for the exercise. For example, in a hospital in Rajasthan, as part of the appreciative inquiry, the staff in Dholpur hospital formed “breakthrough” teams to address problems with water and electricity, the availability of staff, and the speed with which urgent cases are treated.

3.5 Technical Assistance

Through the AMDD Program, most of our partner agencies are working in areas that are, for them, new. For example, some partners have worked mostly at the community level. Others have worked in health posts or even health centers, but not hospitals. Therefore, one of the key roles of the AMDD staff is to provide technical assistance and guidance to partners and the projects. We do this through a number of mechanisms, including periodic field visits, meetings, and (soon) email discussion groups.

Each of the major projects is assigned a project monitor from among our technical staff and partners, as Table 4 shows. The monitor keeps in touch with the partner agency, makes periodic field visits during which s/he provides technical assistance and identifies special needs. (See Appendix 3 for a list of staff and technical partners.) The monitor also fills out a short progress report on the project every six months.

Table 4. AMDD Projects, Partners and Monitors

REGION / COUNTRY	PROJECT PARTNER	PROJECT MONITOR
AFRICA		
Ethiopia	CARE	Barbara Kwast (consultant)
Mali	Save the Children	Judy Graeff
Morocco	UNFPA	Liz Goodburn (JSI)
Mozambique	UNFPA	Patsy Bailey (FHI)
Rwanda	CARE	Judy Graeff
Tanzania	CARE	Barbara Kwast (consultant)
Sub-Saharan Africa	RPMM Network	Deborah Maine

ASIA		
Bangladesh	UNICEF	Zafar Gill
Bhutan	UNICEF	Jason Smith (FHI)
India	UNICEF, UNFPA	Judy Graeff
Nepal	UNICEF	Zafar Gill
Pakistan	UNICEF	Zafar Gill
Sri Lanka	UNICEF	Jason Smith, Judith Fortney (FHI)
Vietnam	Save the Children	Jason Smith (FHI)
LATIN AMERICA		
Nicaragua	UNFPA	Patsy Bailey (FHI), Martha de la Fuente
Peru	CARE	Patsy Bailey (FHI), Martha de la Fuente
OTHER		
Tajikistan	CARE	Jason Smith (FHI)
Various	RHR Consortium	Zafar Gill
Various	Leadership Fund	Zafar Gill
Various	Women's Groups	Lynn Freedman, Martha de la Fuente

During the year, a number of meetings were held to discuss technical assistance to the projects. In July 2000, we gathered all of our technical team (staff and technical partners) in New York for two days to discuss the projects, identify gaps and issues to explore, and plan for the next year. A one-day meeting of this group was held in February after the Project Workshop.

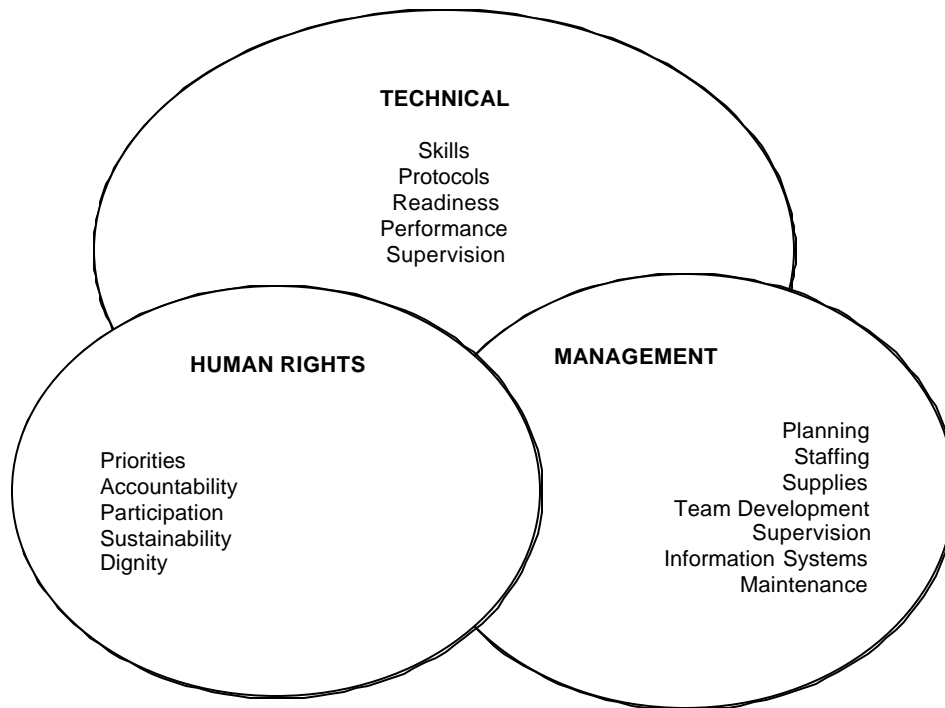
In addition to our technical team, the staff of our project partners visit the projects periodically. We are working with them to coordinate approaches to technical issues and to develop tools to use in providing assistance. Zafar Gill of AMDD is heading up a working group on technical issues for this purpose. We also try to arrange joint field visits with partners' staff whenever possible.

Finally, we are developing a number of email discussion groups in order to carry the process of technical support forward between field visits and meetings. At the Project Workshop in February, the participants identified topics of interest and signed up for discussion groups. We chose the three most popular topics – quality improvement, technical supervision, and management information systems – and email discussion groups on these topics are being developed.

4. APPLYING HUMAN RIGHTS PRINCIPLES

Having a clear focus on treatment of obstetric complications does not mean that our vision or our activities are narrow. In the AMDD Program, there are three substantive areas on which we focus: technical/medical, management, and human rights. As the figure below shows, we see these as being linked to one another in substantial ways. Some of the activities being supported by AMDD to improve technical and management areas have been discussed above. In this section we discuss the human rights component of our program.

The 3 Key Elements of AMDD Projects



It is often said that the current high levels of maternal mortality in developing countries constitute a violation of women’s human rights, and this is certainly true. In AMDD we are developing a range of activities that embody human rights principles – such as non-discrimination, participation, accountability and dignity.

Using human rights to underline the gravity and unfairness of maternal death has been the major use of human rights in the Safe Motherhood Initiative. For example, at the 10th anniversary conference in Colombo, this was one of the major themes. The link between advocacy and actions, however, has remained vague. While human rights documents exhort governments to take “appropriate steps” toward the “progressive realization” of human rights, what this means in a given context is not always clear.

In the AMDD Program, we have not only helped identify what “appropriate actions” for reducing maternal mortality are and are not, we are working to get the United Nations treaty monitoring bodies to assess “progressive realization” using indicators that measure the availability, utilization and quality of emergency obstetric care. These indicators will be more fully discussed in section 5 of this report.

In addition, AMDD is going beyond the use of human rights as an advocacy tool for denouncing the situation. We are developing ways to employ human rights principles to support and strengthen projects – to improve their quality, effectiveness and sustainability – and to ensure that they move effectively toward the fulfillment of the right not to die an avoidable death in pregnancy or childbirth. Some examples will help to clarify what we mean:

- In Nepal, the project activities will include promoting involvement of the District Development Council in the management of the local government hospital. The Council is made up of representatives from a variety of sectors, including various government departments and local NGOs. The hope is that a hospital that responds to and is accountable to the community it serves will provide more consistent, respectful, and sustainable services.
- In Peru, AMDD is joining with a major Peruvian women's group and several other organizations to sponsor a conference that, among other things, will use the AMDD-CARE project in Ayacucho as a case study for examining different approaches to the reduction of maternal death, including the role of human rights initiatives. The conference will enable the Peru NGO community, as well as Ministry of Health officials, to engage with the AMDD project – and vice versa.
- We are developing a series of projects with women's groups (including some in Ecuador, Pakistan, and the Philippines) to demonstrate the supportive role that civil society organizations, working from outside the government health system and using human rights principles and methodology, can play in ensuring expanded availability, access and utilization of EmOC.

A surprisingly wide variety of countries have expressed interest in working with AMDD technical staff to identify ways to apply human rights approaches in their own projects. From the perspective of the AMDD Program, one key challenge is to find the specific issues within the range of possible human rights initiatives that will work synergistically with the management and technical aspects of AMDD projects to generate change in any given country project or any given facility.

Conventional health indicators rarely capture the kind of change that we hope to stimulate through human rights initiatives in the AMDD projects. Responding to the interest expressed during the AMDD meeting in Morocco, a small group of human rights advocates, women's health workers and monitoring/evaluation experts will be meeting in July 2001 to try to develop a practical and meaningful set of indicators that can be used in country projects to assess effectiveness of human rights initiatives.

5. MEASURING PROGRESS

During the early years of the Safe Motherhood Initiative, it became clear that it would not be feasible to use the maternal mortality ratio (MMR) to measure progress. The primary reason for this conclusion is technical difficulties, such as the need for huge sample sizes, significant underreporting, and wide confidence intervals. Another problem with measures of maternal mortality ("impact" indicators) is that they are not very useful in terms of programs. For example, even if we were able to say that the MMR is 400 in one province and 600 in another, we would still not be able to deduce what actions need to be taken in either. Nor would we be able to say what was going well in the province with lower mortality. In sum, measuring maternal mortality is neither feasible nor helpful for program design or monitoring.

In 1991, UNICEF asked us to develop indicators to use in evaluating progress in maternal mortality programs. We developed, in collaboration with colleagues at UNICEF and WHO, what are known as the "UN Process Indicators". They were first published in

1992 by UNICEF, and issued in 1997 by UNICEF, UNFPA and WHO.⁴ ⁵ (See Appendices 4 and 5.) These indicators address the following questions:

- Are there enough facilities providing EmOC?
- Are they well distributed?
- Are enough women using these facilities?
- Are the right women using these facilities?
- Are enough critical services being provided?
- Is the quality of the services adequate?

We believe that these indicators can be a powerful tool in moving forward programs to reduce maternal deaths because they are useful and eloquent at many levels. Rather than saying that a province has an MMR of 400, we can say that it has half as many Comprehensive EmOC facilities as the minimum recommended by the UN Guidelines (which is two per million population), and the Met Need for EmOC is only 20%. Such statistics clearly point the way to action. Moreover, these data are useful at the local level, as well as at the national and international levels. Finally, progress can be measured using these process indicators because changes in the availability and use of EmOC services can register in a short period of time (e.g., 2-3 years).

The use of the UN Process Indicators is being promoted by the AMDD Program in a number of ways. First, all of the projects we support use these indicators in their needs assessments. The needs assessments clearly demonstrated the urgent need to improve women's access to EMOC, with Met Need for EmOC being less than one-third in many countries, and as low as 5% in some. We will be working with the projects to publish their data, as we feel that local ownership of the studies and findings is crucial to their utilization.

In Morocco, where UNFPA is our partner, in addition to the project to improve EmOC services in the Marrakech region, we are supporting a national needs assessment. The other national needs assessments are in the UNICEF projects in Bangladesh and Bhutan.

We are also supporting UNFPA to work with local counterparts to conduct national needs assessments using the process indicators in another 8 countries: four in Francophone West Africa, and four in Latin America. The Francophone needs assessments were conducted during the last year, and the country teams recently met in Mauritania to analyze and discuss their results, as well as to plan intervention projects based on their findings.

As the results of these needs assessments get published, governments and agencies will become more familiar with these indicators and more comfortable using them to

⁴ D. Maine, J. McCarthy and V.M. Ward. Guidelines for Monitoring Progress in the Reduction of Maternal Mortality: A Work in Progress. UNICEF, New York, October 1992.

⁵ D. Maine, T.M. Wardlaw, V.M. Ward, J. McCarthy, A. Birnbaum, M.Z. Akalin, and J.E. Brown. Guidelines for Monitoring the Availability and Use of Obstetric Services UNICEF/WHO/UNFPA, New York, September 1997.

measure progress. This will help move the focus of the Safe Motherhood Initiative from advocacy to actions that can save women's lives.

6. PROMOTING LEADERSHIP

As part of our efforts to move this whole field forward, we are conducting a number of activities to promote and reward leadership. These are small items, in terms of money, but we believe that they serve an important function.

6.1 The Leadership Fund

Anyone who has worked in developing countries knows of exceptional hospitals run by NGOs or religious groups. Often these are the only hospitals providing good care to a substantial (and usually marginalized) population. Even though our program strategy emphasizes collaboration with large, international agencies, we felt that we could not neglect these invaluable institutions. Therefore, AMDD has established the Leadership Fund to provide financial assistance in the form of a one-time grant of about \$40,000 to such groups. The Fund is financed by the interest income of the Gates grant.

In the second year of the program, we awarded Leadership Grants to three of the most dedicated groups in the field:

<u>Organization</u>	<u>Amount</u>
Emmanuel Hospital Association-- India	\$ 39,900
Hospital EPC DE METET-- Cameroon	\$ 33,600
Asha Kiran Hospital-- Orissa, India	\$ 40,000

These groups work under extremely challenging circumstances to prevent maternal deaths in their communities. For example, in the southern Indian state of Orissa, the Asha Kiran Society has been providing medical services for 10 years to a tribal population of 51,000 people living in a mountainous area 16 hours' drive from the nearest city. With their Leadership grant, they will buy a back-up generator for their 30-bed hospital, train staff in EmOC, and establish a blood bank, among other things.

6.2 The FIGO Save the Mothers Projects

Another way that we are promoting leadership in this field is by supporting the International Federation of Gynecologists and Obstetricians (FIGO) to raise the profile and prestige of EmOC. Too often, the emphasis at international Ob/Gyn conferences is on the newest and most sophisticated technology and on research concerning conditions that are of special interest to people in developed countries (such as fertility enhancement). Fortunately, a few prominent obstetricians, including Allan Rosenfield and Mahmoud Fathalla, have been working to increase attention in FIGO to topics of importance to the vast majority of women who live in developing countries, such as lack of emergency obstetric care for women who develop complications.

Professor Fathalla, while he was president of FIGO, established the Save the Mothers Fund, in which national Ob/Gyn societies in developing and developed countries were paired, and then given funds to work on improving the availability and quality of EmOC in

the developing countries. FIGO chose the UN Process Indicators to use as the basic monitoring tool for the projects, and asked Deborah Maine and Barbara Kwast to serve as technical advisors. Not only did this include visits to the projects by Dr. Kwast, but a two-day workshop for the project teams in July 2000 at which Drs. Kwast and Maine helped the country teams analyze their results and prepare reports on their findings.

6.3 The FIGO/WHO Pre-Congress Workshop

In August 2000, AMDD sponsored a FIGO/WHO workshop entitled, "Emergency Obstetric Care for All Women: A Social Responsibility for Obstetricians" that preceded the Triennial FIGO Congress in Washington, DC. Participants, who came from over 40 countries, included obstetricians, midwives, physicians, researchers, and senior officials of ministries of health and international agencies such as the Pan-American Health Organization (PAHO) and the World Health Organization (WHO.)

The objectives of the workshop were:

- To increase awareness about the social responsibility of obstetricians to ensure the availability of emergency obstetric care services;
- To exchange country experiences of obstetricians in expanding access and improving the quality of emergency obstetric services; and
- To make recommendations to enhance the role of obstetricians as providers of health care, team leaders and social advocates.

During the first day of the workshop, the results of the FIGO Save the Mothers Projects were presented and discussed. In addition other participants spoke about their own experiences in trying to prevent maternal deaths in developing countries. During the second day the participants divided into workgroups to discuss the social role of obstetricians as health care providers, team leaders and trainers and advocates.

AMDD contributed \$50,000 to the workshop, which was matched by FIGO. Much of the funding was used to bring participants from developing countries, including 11 people from AMDD-supported projects on three continents.

6.4 The FIGO Community Service Awards

Another activity that we have undertaken in collaboration with FIGO is the Distinguished Community Service Awards. The aim of the awards is to honor individuals actually providing emergency obstetric care in an underserved population, or directly administering facilities providing such services. AMDD has provided funds for three years of awards.

At the Triennial FIGO Congress, the first Distinguished Community Service Awards were presented. These awards provide a \$5,000 grant to the institution in which the recipient works, as well as support for the recipient to present his or her work at a major meeting, conference, or symposium. This year's awardees were:

- Hugo Rodriguez Ferrucci, who provides obstetric care in the Amazon jungle of Peru;
- Grace Kodindo, who is one of only four obstetricians in Chad;
- Alex Mathews, who heads ob/gyn services for several Malaysian states;

- Keith McCallum, who provides EmOC to women in a desert region of Australia;
- Ahmed Bayoumi Shokry, who works in one of Egypt's most deprived areas;
- Nara Vudhikamraksa, who provided EmOC in Thailand for 28 years, retiring in 1999.

6.5 Developing Future Leaders

One of the benefits of the AMDD Program being based in Columbia University is that teaching graduate students is a regular part of our activities. As a result, each year more than 30 students in the School of Public Health learn about maternal mortality and what needs to be done to reduce it.

A smaller number of students (3-5 per year) have intensive exposure to the program by working as one of our Graduate Research Assistants (GRAs) who are part-time staff. These students benefit from contact with our technical partners and staff of the various country projects, as well as access to new publications and cutting edge research.

Another way in which we support the development of future public health leaders is by supporting internships. This summer, three students will gain valuable field experience by working as interns with AMDD-supported projects.

Finally, the staff of AMDD give guest lectures in other universities (including Johns Hopkins and Tulane) on the subject of maternal mortality. The students in these classes are eager to hear about our strategy and program, and it is not uncommon for them to contact us later to learn more.

After graduation, these students fan out across the world, taking jobs with their governments, with international agencies or with NGOs, carrying with them their understanding of this issue, and their appreciation for the importance of basing programs on sound evidence.

7. FOSTERING A GLOBAL NETWORK

For our efforts to succeed, in the largest sense, it is necessary to have a global network focused on this issue. We are actively working toward this end.

7.1 Marrakech Workshop

In February 2001, AMDD country teams met at the first annual Project Workshop held in Marrakech, Morocco. For many of the 120 participants this international meeting provided a sense of common purpose and global cooperation. The opportunities for exchange of experience and learning were rich and diverse.

The workshop included formal presentations, workgroup sessions, project poster sessions, country team meetings, and informal discussions. The formal presentations helped clarify the objectives, approach, and vision of the AMDD Program while the working group sessions allowed participants to discuss important technical issues in five major areas -- upgrading EmOC services, management issues, human rights, monitoring and evaluation, and documentation. Country project teams shared their activities and achievements with one another through the project poster sessions. AMDD project

monitors used country team meetings as opportunities to identify obstacles to progress and technical assistance needs.

The level of enthusiasm and commitment demonstrated by the participants, and the benefits they perceived the workshop to have, far exceeded our expectations. This was one of the most important activities of the year and we are already beginning preparations for the second project workshop. A more detailed synopsis of the Marrakech workshop is presented in Appendix 6.

7.2 Exchange Visits

Realizing the importance of collaboration and information exchange in building a global network that supports the AMDD approach, we have sponsored a number of exchange visits in the past year. These visits allow AMDD partners and team members to travel to international conferences or AMDD projects in different countries so that they may learn firsthand how others are working to combat maternal mortality and share information about their own efforts. For example, Redouane Belouali from Morocco and Anwara Begum from Bangladesh made presentations at the World Congress on Women's Health meeting in Calcutta, India last November. In the future, we plan to support more such exchanges.

8. PROMOTING REPLICATION

Another area in which reality is surpassing our expectations is that of replication. One explanation for this is that international agencies, funders and governments are eager to take action on maternal mortality, but have been waiting until there were good program models to emulate. Whatever the reason, replication of AMDD-supported activities is off to a promising start, as the following examples show:

- In India, AMDD supported needs assessments in 6 districts in the UNICEF project. Using other funds, UNICEF has conducted needs assessments in 3 other districts, and has plans for another 13 districts next year. (Note: an average district in India has a population of 1-2 million people.)
- In Mozambique, the AMDD-supported project is in one of the country's 10 provinces. UNFPA, our partner in Mozambique, is optimistic that using this project as a model, it can get other funders to cover the rest of the provinces.
- In West Africa, we are supporting national needs assessments in four Francophone countries through UNFPA. A fifth country, Niger, did a needs assessment funded by the country office. Moreover, most of these countries have good prospects for funding the projects they have designed using the results of their needs assessments.
- In Peru, CARE staff report that they are already taking approaches and lessons learned from the AMDD-supported project in Ayacucho and applying them in their other projects, such as the one in the North supported by USAID.

In addition, there are signs that even some agencies that are not our partners are looking to us for technical guidance. For example, recently DFID (the UK's Department for International Development) asked Deborah Maine to address their health staff at a retreat in Bangkok. Many of the staff, including some very senior members, were enthusiastic about taking an approach similar to ours. This is very encouraging, since DFID is one of the most active agencies in maternal health.

9. DISTRIBUTING INFORMATION

Making sure that information about the program and the projects reaches people who can benefit from it is a crucial function of the Columbia team, and we are addressing it in a number of ways some of which are described below.

9.1 AMDD Website

During the last year we set up a website for the program. The address is <http://www.amdd.hs.columbia.edu>. This website currently contains information about the AMDD Program, our strategy, partners and projects, as well as materials from and about the Project Workshop held in Marrakech in February. We intend to make this site interesting and useful not only to our partners, but to other groups as well. New material and features will be added regularly.

9.2 AMDD Newsletter

Another mechanism for sharing information is our newsletter entitled *AMDD Notebook*. While being of interest to the AMDD country teams around the world, it will also interest the broader international health and development communities. Through *Notebook*, we plan to:

- support information-sharing among country teams,
- provide useful information on projects and publications,
- recognize innovation and commitment; and
- demonstrate the AMDD approach, strategies, and techniques.

AMDD Notebook will be produced three times a year. In order to better serve the project teams it is being translated into Spanish and French. A copy of the first issue is included as Appendix 7.

9.3 International Journal of Gynecology and Obstetrics (IJGO)

In thinking ahead about dissemination of information from the projects, we realized that at present there is no really suitable journal in which to publish reports of this kind. Existing journals either focus too much on research (and not enough on programs), or else they are not generally read by people in the maternal health field. In addition, one journal widely read in international obstetrics circles, the IJGO, is expensive. To solve this problem, we have arranged with FIGO for IJGO to publish a special section 3-4 times a year, amounting to 100 pages. This section is being edited by Judith Fortney, one of the foremost researchers in this field and a member of the AMDD technical team. Articles will be peer-reviewed and will feature initiatives in developing countries to

improve the availability and quality of EmOC, whether in AMDD-supported programs or elsewhere. The first issue will be published in August 2001.

To address the problem of the expense of subscriptions to the IJGO, we devised two solutions. First, we purchased 150 4-year subscriptions, most of which are going to our projects overseas. Second, we agreed with IJGO that this section of the journal will go on the internet, full text, as soon as it is published.

9.4 Distance Learning Course

At the suggestion of UNFPA staff, our agreement with them includes the production of a distance learning course on EmOC and the process indicators. This course is to be part of a series on reproductive health produced by the UN Staff College in Turin, Italy, for UNFPA. During this past year, meetings were held at which experts from various agencies decided on the content of the three modules of the course, including questions and answers for the students. The text was written by Nadia Hijab, a consultant who works with AMDD on documentation. At present, the draft version is being produced in limited quantity for pilot testing. After any revisions are made, it will be widely distributed. While it is going to be used as part of a distance learning course with tutors, it is designed to be used by people independently.

9.5 Hopkins/WHO Manual

In our role of providing technical assistance to the projects, we reviewed many technical materials, looking for those best suited to the projects. The best EmOC text we found was a draft of a manual being produced by Johns Hopkins and WHO, eventually titled "Managing Complications of Pregnancy and Childbirth" (MCPC). Therefore, we offered to help support the development and distribution of this manual.

AMDD, through our project partners (UNICEF, UNFPA, CARE, RPM, the RHR Consortium and Save the Children), has arranged to distribute 1,000 MCPC manuals in English all over the world. The shipping charges to our project partners will be covered by AMDD. Our project partners, in turn, will send the manuals into the field via internal pouch systems. In addition, AMDD has contributed \$50,000 support towards the translation and production of the French version of the MCPC manual.

9.6 Presentations

In the last year, New York-based AMDD staff members presented about three dozen lectures, plenary session addresses, and workshop and seminar presentations around the world. Many more were delivered by project and technical partners. We and our partners are invited to such meetings because of the growing interest among the public health community in AMDD's approach and activities. For a list of presentations by AMDD staff, see Appendix 8.

10. REVISITING OBJECTIVES

Now that we have reviewed our recent activities and accomplishments in some detail, we can revisit major objectives set forth in our original proposal to the Gates Foundation.

- To assist at least 15 governments to conduct national needs assessments of EmOC using the UN Guidelines and process indicators.

Year 1: Arrangements were made to support 11 national needs assessments, in addition to several sub-national assessments.

Year 2: National needs assessments were completed in seven countries (Bangladesh, Bhutan, and 5 Francophone African countries⁶); nearly complete in Morocco, and planned in four Central American countries.

- To assist at least 12 governments to plan programs to improve EmOC in their countries.

Year 1: Actively worked with 10 governments on the planning, distribution, and functioning of EmOC services.

Year 2: Actively worked with 32 governments: UNICEF (6 countries); UNFPA (4 countries); CARE (5 countries); Save the Children (2 countries); RPMM (15 countries).

- To engage at least 20 non-governmental organizations in working to improve the availability, utilization, and quality of EmOC.

Year 1: Established relationships with five major NGOs: CARE, RPMM, Save the Children, RHR Consortium, and FIGO.

Year 2: In addition to those above, we began working with: EngenderHealth, CLADEM in Peru, Sendas in Ecuador, Aga Khan University in Pakistan, Shirkat Gah Women's Resource Center in Pakistan, and Likhaan in the Philippines.

- To hold 4 international conferences in five years at which participants from the countries involved in the program report on their activities and their findings.

Year 1: Activities were scheduled for year two.

Year 2: Two international conferences were held this year to discuss AMDD-sponsored projects: Our first annual AMDD workshop held in Marrakech, Morocco in February 2001 included over 100 representatives from our projects. In addition, the RPMM Network held a Methodology Workshop in Harare, Zimbabwe in which its 19 teams participated.

⁶ Includes one country (Niger) not funded by AMDD but benefiting from the workshops and technical assistance we provide.

- To publish or facilitate the publication of at least 15 articles and/or reports on the activities of the program.

Year 1: Nine articles had either been published or gone to press.

Year 2: In year 2, three major publications were produced and will be widely distributed. The first, entitled “Saving Women’s Lives: A Call to Rights-Based Action”, was produced by UNICEF’s Regional Office for South Asia (ROSA). The second was the proceedings from a workshop to discuss the needs assessments from five Francophone countries: Evaluation de la Disponibilite et de la Qualite des Services Obstetricaux. The pilot version of the distance learning module prepared by UNFPA called “Reducing Maternal Deaths: Selecting Priorities, Tracking Progress” has gone to press and will serve as a teaching tool for health professionals around the world.

11. LOOKING AHEAD

Having reached the end of the second year of the program, it is a good time to reflect on its overall shape and pace. We are pleased with the progress that has been made. In particular, our technical partners include many of the leading experts in the field. Additionally, we have enlisted a strong set of project partners who have the capacity to influence policies and implement programs around the world. It is encouraging to see the commitment, energy and creativity with which they are implementing their projects and beginning to build improving EmOC into their own organizational agendas.

Moreover, there is a growing perception among our partners and other agencies (such as DFID) that EmOC is a good entry point for addressing broader structural deficiencies in health systems. In this view, if by careful and creative attention to the technical, management and human rights dimensions of EmOC, AMDD-supported projects can succeed in making EmOC services functional in a country, we will have brought about important changes in larger systems. These successful efforts can then be used as models for other kinds of services.

In terms of field projects to improve EmOC, a large number (51) have been started. The major projects are those with UNICEF (6), UNFPA (4), CARE (5), and Save the Children (2). Added to these are the country teams of RPMM (19), the small projects of the RHR Consortium (12), and the Leadership Fund grants (3). Together, these projects encompass a wide range of situations in terms of geography, political structures, cultural settings and health systems so that we expect that the lessons learned from them will be applicable globally.

The main preoccupation for the next few years will be to assure high-quality implementation, documentation and replication. During this period, our team at Columbia, together with our partners, will be responsible for assisting the country teams, carrying lessons from one project to another, and facilitating monitoring and documentation. For example, on a recent trip to Rajasthan, we saw an urgent need to document the inspiring changes taking place in the services. We made this recommendation to our partners, and will work with them to identify suitable consultants or staff to provide documentation, as well as venues for dissemination.

One area of new activity is the development of tools for use in programs. For example, we have begun discussing another project with EngenderHealth: producing infection prevention training materials for EmOC. Also, in collaboration with UNICEF/South Asia, we are planning to develop training curricula for obstetrics, nursing and anesthesia as they relate to EmOC. At present, such curricula do not exist, and therefore even trained health professionals sometimes do not have the skills critical for saving women's lives.

Another area in which we foresee substantial new activities in the coming years is policy change. We plan to identify policies that limit women's access to EmOC in different parts of the world. Examples of these are laws or policies that make it difficult to have a blood bank in district hospitals in India, and prohibit general practice physicians from doing cesarean sections in Morocco. A first step in some situations will be to ascertain the nature of the barrier (i.e., Is it a law, a policy or just custom?). Once that is done, we can work with partners in the country to identify possible legitimate policy concerns that may have motivated passage of the law, such as assuring the safety of the blood supply. Then we can carefully tailor policy change initiatives to address legitimate concerns without obstructing access to life-saving care. Our close connections to senior obstetricians, FIGO and UN agencies will be helpful in these efforts.

We are also planning to develop new activities in the area of obstetric fistulae. In Africa especially, thousands of women suffer for the rest of their lives from this painful and humiliating obstetric disability. With good care – such as timely cesarean sections for women with obstructed labor – most cases of fistula can be prevented. For women who have already developed this problem, surgical repair is possible, but this skilled and delicate operation is available in only a few places on the continent. Consequently, women wait for years (or forever) for help. By improving EmOC, we are helping to prevent fistulae. In addition, we are going to work with UNFPA and FIGO to improve the availability of fistula repair in Africa. This effort will begin with a meeting in London in July 2001.

12. CONCLUSION

At the end of the second year, AMDD projects in many countries have completed initial planning steps and have begun implementing activities. These activities are taking place all over the world, in many agencies, on many levels. They range from the concrete (improving services in health facilities, monitoring progress) to the abstract (promoting leadership and fostering a global network), but they are all part of one large vision – to bring about the strategic, behavioral, health systems and institutional changes needed to provide women with live-saving care for obstetric emergencies. We understand that not every project will succeed, but we are optimistic about the success of our overall objective.

13. FINANCIAL REPORT

Since we were in the process of setting up the program in Year 1, and consequently our expenditures were lower, we have combined expenses for Years 1 & 2 in this report. Table 5 shows our analysis of expenditures. Since some of the University's categories do not reflect our activities, we have adjusted them as per the footnotes to Table 5. In addition, we present the University's official account as Table 6.

**Table 5
Analysis of Expenditures (Years 1 & 2)**

Category	Cumulative (Years 1 & 2)			% Spent
	Budget	Expenditures		
Salaries & Fringe Benefits	2,900,000	1,504,546		52%
Supplies	100,000	8,519		9%
Travel	1,440,000	701,720	a,b	49%
Consultants	1,500,000	50,068	c	3%
Communications	100,000	70,262	d	70%
General Services	244,000	71,002	e	29%
Subcontracts	12,560,000	14,962,383		119%
Tuition	0	26,489		
Equipment	200,000	55,152		28%
Total Direct Costs	19,044,000	17,450,141		92%

NOTES:

- a Includes \$30,000 per diem costs (from General Services)
- b Includes \$106,120 hotel charges for the AMDD Workshop (from General Services)
- c Includes \$5,000 professional service fees (from General Services)
- d Includes \$58,000 for IJGO subscriptions (from General Services)
- e Adjusted according to notes a-d

As was the case for Year 1, for years 1&2 combined, we spent less than we budgeted in every category except subcontracts, even though this year we held our first large international meeting. Overall, for the two years, we spent 92% of the direct costs budgeted— \$17,450,141 of the \$19,044,000 budgeted.

12.1 Salary and fringe benefits: A total of \$1,504,546 was spent on salaries and benefits. This represents 52% of the cumulative budget for Years 1 & 2. The increase over last year in this category reflects a growth in the AMDD core staff.

12.2 Supplies: There was a decrease in spending of office supplies this year. The cumulative sum of \$8,519 represents 9% budgeted for Years 1 & 2.

12.3 Travel: \$701,720 (or 49% of the amount budgeted) was spent on travel. These expenses, which include per diem costs, cover travel into the field by core staff and overseas staff in efforts to provide technical assistance with needs assessments, implementation, management, women's rights issues, etc. It should be noted that our

project and technical partners received some funds for travel through existing subcontracts. Also, expenses for the first annual AMDD Project Workshop held in Marrakech, Morocco in February, 2001 were included under this line item. This covered the hotel charges and the travel costs for all participants to attend the Workshop.

12.4 Consultants: \$50,068 (or 3% budgeted for Years 1 & 2) was spent on fees for independent consultants. It should be noted that for many of our consultants (technical partners such as FHI and JSI/UK), we have cost-reimbursement subcontracts and therefore are included in the subcontract category. Also, this year, for one person there was a change in status from consultant to overseas AMDD staff.

12.5 Communications: Although some costs for office phones, cellular phones, fax, shipping, computer usage charges, etc. for the year were covered by our other grant from the Gates Foundation, we spent \$70,262 or 70 % of the budget. Our major expense for this year is the sponsoring of 150 four-year subscriptions to the "International Journal of Gynecology and Obstetrics", which cost \$58,000.

12.6 General Services: We spent \$71,002 or 29% of the budget for this line item. General services includes a broad range of expenses such as photocopying, printing costs, computer repairs, translation fees, bank charges, generation of our newsletter, development of a website, production of a brochure about AMDD's aims/goals, etc.

12.7 Subcontracts: By far our largest expenditure was for subcontracts. During these two years we spent \$14,962,383 (or 119% of the budgeted amount) on scheduled subcontract payments to our technical and project partners, and the Leadership Grant program. Of this amount, the vast majority went to our major partners for projects -- \$14,670,334, or 117% of the budgeted amount. Our subcontracts with our technical partners – FHI, JSI, IIMA – totaled \$292,049.

12.8 Tuition: We have maintained the same level of support for our graduate research assistants (GRAs). A sum of \$26,489 was spent over Years 1 & 2.

12.9 Equipment: We spent \$55,152 (or 28% budgeted for Years 1 & 2) on equipment such as laptops for overseas field trips and a copy machine to meet our increased photocopy needs.

12.10 Interest earned: \$722,274 was earned in interest.

12.11 Direct Costs: The total expenditures for Years 1 & 2 are \$17,450,141.

APPENDICES

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