

Indonesia's Educational Challenges and Opportunities for the 21st Century

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The reproductive health status of Indonesians, generally, has improved during the last decade¹: infant, child and maternal mortality have decreased; contraceptive prevalence has increased and the proportion of infants born in high risk groups has declined. These changes signal that the goals of the Government of Indonesia's (GOI) reproductive health care programming are being achieved.

Despite significant success, Indonesia is at critical juncture in its efforts to bring the nation to the next higher level of health status. The *purpose* of this paper is to :

- Summarize the fundamental challenge to the national effort to improve health status.
- Describe an action plan designed to improve health status by continuing the process of strengthening the systems for reproductive health education and training *and* delivery of reproductive health services. The focus of this plan is the introduction of appropriate technology innovations into these systems. (For details of the action plan, see **Appendix B**).

THE CHALLENGE

As policymakers look to the future, there is great interest in identifying ways to continue to improve health status. To a considerable extent, improvement in health status is dependent upon the nations further decreasing maternal mortality. To achieve this, there is a need to expand the number of health care providers qualified to provide selected reproductive health care services. For example, increasing the availability and practice of family planning, is an effective intervention

of decreasing maternal mortality over the long term. Furthermore, immediate reductions in maternal mortality can also be achieved by increasing the availability of qualified providers who have the skills and knowledge; and skills is largely a function of preservice training in health professional schools and inservice training for practicing health professionals. Training, in turn, must be developed and be consistent with the needs and realities of the service delivery system.

Much has been done in the past 3-5 years to begin strengthening Indonesia's reproductive health training. A fundamental change sweeping over the system of reproductive health training is the incorporation of a competency-based approach to training. The underlying rationale for shifting to competency-based training (CBT) in reproductive health is recognition that previous training tended to stress knowledge transfer over clinical skills. As a consequence, it has been difficult and costly to generate providers with the appropriate skills for their jobs. To balance the transfer of both knowledge and skills, in 1991 Indonesia undertook efforts to introduce and apply CBT to selected reproductive health training.

While many accomplishments have been achieved, our experience has given us a growing appreciation of the challenges, implications and opportunities of introducing and applying CBT. Many of these are summarized in other papers presented in this seminar. Most important among these is the recognition that the introduction of CBT requires both service delivery and training systems to manage and access information in new ways. This is essential in achieving training that results in qualified providers who are useful to the service delivery system and responsive to client/patient needs.

POGI believes that CBT should be applied to wider areas of reproductive health training and even to other topical areas. The rationale for this is that CBT produces a higher percentage of qualified providers for any given clinical area and is more efficient than training methods applied in the past. A major challenge in

¹ Demographic and Health Survey —1991, October 1992. Central Bureau of Statistics, National Family Planning Coordinating Board, Ministry of Health, Macro International, Inc.

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continuing to strengthen reproductive health training is finding alternate ways of designing, developing and implementing the components of CBT. Ways which :

- are based on medically sound clinical practices and policies while also being the best and most affordable;
- enhance opportunities for trainers to keep up-to-date not only with regard to clinical knowledge and skills, but also to clinical training skills, and
- accommodate ever larger numbers of learners, especially with regard to transfer of those clinical skills which are difficult to teach.

The critical constraints which must be overcome relate in one way or another to the need to make user access to information more efficient, for example:

- Keeping clinical service delivery policies/guidelines and clinical training programs (and trainers) up-to-date is hindered by slow and difficult access to expert information.
- Preservice institutions can no longer expect to place further classroom and clinical training responsibilities on limited faculty when there is no significant opportunity to hire more trainers. (The training system needs additional options for implementing CBT efficiently).
- Courses which are fixed in time and location (i.e., most inservice training) are increasingly difficult to justify for several reasons :
 - * Indonesia currently has tens of thousands of service providers who must receive refresher clinical training in the area of essential reproductive health care services alone. This coupled with budgetary constraints will make it impossible to complete timely updates.
 - * Inservice courses invariably extend for more time than a learner can be spared away from the job site.
- Among the components of CBT, knowledge transfer is the most time consuming (both for learners and faculty). The lack of readily available alternatives for transferring knowledge to learners hinders increased use of CBT.
- Use of models/simulations has dramatically improved the process of skills acquisition and competency by learners and decreased the need for a supply of clients/patients for learner practice. However, some types of clinical training (e.g., management of incomplete abortion) which are critical to further reducing maternal mortality, involve procedures which cannot be made available "upon

demand" and for which training on models is not sufficient. Alternatives for providing clinical practice in these skills must be explored.

- If maternal mortality is to be reduced further, once providers are trained, we must find ways of providing them access to expert backstopping — especially when a provider, who is located in a remote area where patient transport is not possible, is performing a procedure for which s/he has limited hands-on clinical practice.

The nature of these issues suggests that information technologies will be an important part of the solution if:

- continued progress in strengthening Indonesia's training system is to occur, and
- the training system is to be more responsive to client/patient needs.

OVERALL PLAN OF ACTION

Goal and Objectives

POGI believes that the *goal* set by the GOI several years ago—to increase the availability of reproductive health care services—remains an appropriate goal toward which progress has been made and for which further progress is needed. Strengthening the training system, especially clinical training, is a central and essential *strategy* for achieving this goal. Moreover, securing a regular supply of qualified, clinically competent providers is an important aspect of expanding services.

To achieve the goal of increased availability of reproductive health services, POGI now believes there is a need to further strengthen the reproductive health training *and* service delivery systems by introducing appropriate technologic innovations which can :

- Increase the availability of information in a form easily useable by decision makers who make policy decisions affecting the service delivery and training systems.
- Improve and increase accessibility of the up-to-date technical information needed by the academic community to support improved training programs.
- Provide alternatives for efficient and effective transfer of standardized and competency-based knowledge to learners.
- Support both clinical training of providers in emergency procedures and acute care problem solving at remote sites where client/patient transport is not possible.

Principles for Introduction of Technology

It is POGI's belief that the technologic innovations represented in **ReproSystem** can contribute in a very significant way to the continued strengthening of *integrated* reproductive health education and training as well as service delivery. Therefore, it is proposed that introduction of selected **ReproSystem** components be undertaken as the next phase. Furthermore, it is proposed that selected **ReproSystem** components be :

- Applied within the emerging competency-based clinical practice training network supporting both preservice and inservice programs.
- Introduced so as to take advantage of existing human and physical resources (e.g., use the existing radio-telephone network connecting many hospitals) in order to develop further the pool of human resources most ready to absorb the new skills and knowledge.
- Applied in other setting which can be linked to the clinical practice training network.
- Introduced by drawing upon the **ReproSystem** model of hardware and software component applications. (Specific applications eventually to be available at one or more points in the clinical practice training network and/or related governmental ministries would include : **ModCal, MomCare, ProTrain, ReproLearn, ReproLine** and **TrainerNews**).
- Applied first to clinical family planning and then expanded to other priority areas of reproductive health—especially training and service delivery related to management of complications of labor and delivery.
- Applied in a phased plan of action over a 3-5 year period.
- Accompanied by appropriate training of clinicians and support staff in the use and maintenance of **ReproSystem** components.

Why Is It Appropriate to Introduce **ReproSystem** Now

Application of information and communications technologies in the form of **ReproSystem** components is appropriate for use in Indonesia now because :

- **ReproSystem** components include applications which strengthen and are the logical extension of the already introduced CBT.
- **ReproSystem** can be introduced gradually by supplementing or giving new life to older, existing systems. For instance, the extensive radio-telephone

system currently in use in many hospitals may be used to connect **MomCare** to these same hospitals. This would represent a greatly expanded service capacity for a very marginal increase in operating costs.

- The human resources required to *implement and support* computer technologies already are available in Indonesia.
- The human resources who will *use* these technologies in many cases are familiar with or already interfacing with these technologies.
- Introduction of **ReproSystem** can be a powerful vehicle for further expanding the baseline skills and professional development expectations of existing health care personnel—with a positive overall effect on public health.
- **ReproSystem** components can be used as a potential vehicle for Indonesia to develop products and services which it can export to other nations.

Summary of the Action Plan

The specific plan of action for introducing the recommended information and communications technologies to support the service delivery and training systems has three major interventions:

1. Conduct a large scale demonstration project to allow time to:
 - adapt **ReproSystem** components to the working environment of Indonesian policymakers, academicians and learners;
 - develop production specifications for hardware to be manufactured in Indonesia; and
 - transfer the necessary knowledge and skills to Indonesia counterpart in order to make use of the new information and telecommunication technologies sustainable.
2. Introduce computer-based learning centers, including related information services (and a capability for ongoing development) and systems support, into 800 sites over a 5 year period.
3. Introduce **MomCare** services and systems support into approximately the same number of clinical care facilities over a 5 year period.

The following tables summarize the number of clinical practice training sites both within the national clinical practice training network (**Table 1**) and outside the clinical training network (**Table 2**) into which learning centers and/or **MomCare** work stations will be introduced.

Table 1. Phased Implementation of Clinical Practice Training Sites With Learning Centers/MomCare Stations* (National Clinical Practice Training Network)

	Phase I	Phase II	Phase III	Phase IV	Phase V	Total
NRC	2/2	-/-	-/-	-/-	-/-	2/2
PTC	2/2	10/10	13/13	-/-	-/-	25/25
DH	-/-	50/10	50/90	200/200	-/-	300/300
HC	-/-	-/-	10/10	90/90	400/400	500/500

* Figures represent numbers of NRC, Provincial Training Center (PTC), District Hospital (DH) and Health Center (HC) sites with Learning Centers/MomCare stations. All other sites include only Computer Learning Centers.

Table 2. Phased Implementation of Sites Outside the Clinical Practice Training Network With Learning Centers

	Phase I	Phase II	Phase III	Phase IV	Phase V	Total
Pusdiklat Training Centers	-	6	7	7	-	-
Type "B" Hospitals	-	-	-	-	-	-
Total						

Introduction of these three interventions would be made possible by establishing a self-sustaining capacity in Indonesia to :

- edit multimedia courseware from pre-existing courseware,
- develop multimedia courseware for clinical education,
- manufacture hardware components for selected **ReproSystem** components, and
- provide systems support to learning centers and **MomCare** work stations.

The specific details and effort needed to be successful in implementing these interventions are described in **Appendix B**.

CLOSING COMMENTS

Indonesia's educational system faces both major challenges and significant opportunities. Among the most significant health care challenges facing the nation is the goal of reducing maternal mortality. The opportunity at hand is the knowledge that an important strategy which will work to reduce maternal mortality is available. Specifically, what is needed is to :

- increase the availability of quality reproductive health services by strengthening the training system, and
- strengthen the training system by applying an expanded CBT approach.

A second challenge is to recognize that introduction of competency-based training means that managing and accessing information must be organized more effectively and efficiently in ways which create linkages among policymakers, academicians, health care providers and learners in ways which have never before been required. The opportunity at hand is the availability of a model for improving access and application of information for reproductive health in the form of **ReproSystem**, which can be adopted by Indonesia and expanded and applied by Indonesians. An additional opportunity is the potential for Indonesians to form international partnerships to disseminate these innovations to other nations.

A third challenge is to identify and apply additional approaches for designing, developing and implementing competency-based training which will enable us to extend clinical training to ever larger numbers of providers. The opportunity at hand is the availability of information and telecommunication technology tools which can help to address these needs.

To meet all of these challenges, we must consider **not** whether to introduce these technologic innovations but **how best** to introduce them. To be successful, this must be done in a fashion which makes sense for Indonesia and which builds upon existing capabilities.

Reducing maternal mortality is a singularly important priority in assuring our nation's future competitiveness. We must begin to act now or risk the economic future of our children.