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Impact of HRP research in maternal and perinatal care: a case-study

Reviewer

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Executive summary

Background

The work of HRP on maternal and perinatal health between 2003 and 2007 included trials on the prevention and management of pre-eclampsia, an assessment of the maternal and neonatal consequences of female genital mutilation and scaling-up of a new approach to antenatal care. The last activity – the WHO antenatal care model for translating evidence-based interventions into policy and practice – combined work on best practices, safe motherhood and control of sexually transmitted infections, and is relevant for low-income countries in which maternal health must be improved [Millennium Development Goal 5 (MDG5)].

Methods

Publications, technical reports, 'grey' literature and a site visit to Thailand provided the basis for evaluating the new approach in operation. Meetings with policy-makers, health-care providers and mothers and an e-mail questionnaire to elicit expert opinion provided information on experiences, potential barriers and facilitators of use of the model.

Findings

Process

Between 1991 and 1998, HRP designed an evidence-based antenatal care model for low-risk women, which was integrated into a four-visit programme of screening, intervention and health promotion for delivery at the first visit and at 26, 32 and 38 weeks. A cluster – randomized trial was conducted to compare the clinical effectiveness and cost–effectiveness of the model with that of the commonly used standard model in Argentina, Cuba, Saudi Arabia and Thailand. On the basis of the results, published in 2001, HRP's maternal and perinatal health team of four persons supported a scaled-up approach in Khon Kaen Province, Thailand, between 2003 and 2006 by helping to prepare training material (WHO 2002a) and e-learning tools and by sponsoring training workshops.

Outputs

The new model was equivalent to the standard model in terms of perinatal outcome. Intervention clinics achieved more effective treatment of syphilis and a significant reduction in the number of visits (median, five versus nine). In a low-risk population, participating women had a higher rate of pre-eclampsia (prevalence, < 2%; odds ratio, 1.26; 95% confidence interval: 1.02–1.56) out of three maternal outcomes (pre-eclampsia/eclampsia, postpartum anaemia and urinary-tract infection); however, there was no difference in complication rates.

Policy and programme outcomes and collaborative arrangements

Thai Government support for research on public policy results in collaboration between academia and the State and creates an atmosphere receptive to evidence-based interventions. The provincial team modified the model to address psychosocial and logistical concerns and inefficiencies in the health promotion component. During the transformation, stakeholders (the public and health-care providers) were informed by various media about the new approach. Deficiencies in skills were addressed, and facilities were equipped to deliver new services. The programme will be extended to five additional provinces in 2008, to reach 12% of the population.

The study team from Centro Rosarino de Estudios Perinatales (CREP) – a WHO collaborating centre in Argentina – introduced the new model elsewhere

in Argentina and in Yap State, Federated States of Micronesia. The United States Agency for International Development promoted the model as 'focused antenatal care' in Ghana, Kenya and South Africa. The model is also in use in the United Republic of Tanzania and Zimbabwe. In 2007, HRP modified the model for the African setting, adding new components on the prevention of HIV infection and violence.

Cost-effectiveness and expected annual global benefits

The four-visit model is less expensive than the commonly used standard model, even with an additional visit. Women attending clinics under the new model spent less time and money for antenatal care, and the health-sector costs per pregnancy were lower. Globally, US$ 16.4 billion dollars could be saved annually by switching to the four-visit antenatal care model, including US$ 5.4 billion in countries with medium (50–500/100 000) and high (> 500/100 000) maternal mortality ratios.

Impact

Stanton et al. (2007) reported that, in Africa and Asia, antenatal care increases the rate of births with a skilled attendant, from 13% to 45% for women who make two or three visits to 73% for those who make four or more visits. The availability of high-quality antenatal care may encourage women to attend the recommended four visits and help increase skilled attendance, with the long-term potential of significantly reducing both maternal and perinatal mortality.

Conclusions

Strengths

HRP research has set the global standard for antenatal care. The framework for monitoring attainment of MDG5 now includes the HRP recommendation of using the proportion of pregnant women worldwide who attend for four antenatal visits as an indicator of antenatal care use.

The model should be seen as a blueprint, to be adapted to the local context and updated as new evidence becomes available. Its robustness is demonstrated by its capacity to yield equivalent results in four different developing country settings, whether delivered by midwives, general practitioners or obstetricians. It has also performed well in Africa, where antenatal care attendance has usually been less prevalent compared with other parts of the world.

Cost-effective interventions can be designed systematically and implemented on a wide scale, resulting in savings for both individuals and the health sector without compromising outcomes and at the same time, improving care, as health-care providers have more time to spend with women. A political environment receptive to evidence-based approaches eases the transition from research to practice. Leadership is critical, as an active change agent will be more effective in bringing new evidence into policy and practice.

Weaknesses

This new approach will require modification of basic obstetric and midwifery training programmes. Concern that too few visits during the third trimester could result in under-diagnosis of pre-eclampsia must be addressed, as this condition is a significant risk factor for maternal and perinatal morbidity and mortality, especially in countries with few resources.

Recommendations

As the HRP maternal and perinatal health team consists of only four persons, HRP should use collaborating centres, institutions and networks of health-care professionals to share its experience more widely, e.g. by sponsoring regional meetings and attendance at professional meetings. By working with local champions, HRP could more effectively reach policy-makers and health authorities to increase use of the model.

Future work

HRP could evaluate the impact of the new approach on health systems, especially in countries with few resources, where demand for maternal health care may increase. It could also design and test strategies for health promotion and behaviour change and draw up guidelines for women at high risk attending clinics as outpatients.

1. Introduction

1.1 Antenatal care: rationale and use

Antenatal care evolved as a model of preventive care, involving identifying and addressing health conditions in the mother or fetus that might threaten the pregnancy outcome, while preparing mothers for their parental role (Villar, Bergsjo, 1997). The expected benefits include greater awareness and positive health behaviour, especially with regard to infant health care, nutrition, immunization, family planning, control of sexually transmitted infections and use of skilled care at delivery for reducing maternal mortality (Stanton et al., 2007).

Utilization rates vary from almost universal coverage in developed regions to one in three mothers in least developed countries (HRP, 2007). Care can range from routine primary care to screening and intensive life-support during pregnancy up to delivery. Primary and first referral level care should be available to all pregnant women, including those referred due to complications of pregnancy (Carroli et al., 2001a).

Experts have reported (e.g. Lindmark, Cnattingius, 1991; Rosen et al., 1991) that antenatal care procedures and examinations have been accepted is applicable in a wide range of sociodemographic settings would be a global public good.

1.2 Why did HRP become active in this field?

The mandate of HRP is to conduct or promote research on important questions in sexual and reproductive health. By being sited within a respected international body and due to the scope of the work of WHO in the field of health, HRP is ideally suited to tackle unresolved topics affecting large sections of the global population, which might not be initiated by institutions or countries.

The evaluation of HRP in 2002 identified several priorities for future research: adolescent reproductive health, preventing unsafe abortion, reproductive tract infections and sexually transmitted infections, best practices and safe motherhood. The means identified by WHO for improving the efficacy of antenatal care were: rationalizing the rituals of antenatal care, using antenatal care as a platform for other interventions, establishing more effective communication with women and avoiding over-medicalization (WHO, 2006).

HRP is uniquely qualified to evaluate routine