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Birth kits for safe motherhood in Bangladesh

Tetanus infection remains the leading cause of high neonatal mortality in Bangladesh. Birth kits which instruct and assist in a clean, safe birth are seen as a key measure in reducing the high incidence of neonatal deaths. A multisectoral programme has developed a simple kit and tested its potential for distribution to pregnant women. Initial results are positive and development is continuing.

Bangladesh continues to have high rates of mortality associated with delivery practices. The current neonatal rate is 73 per 1000 live births, representing over a quarter million neonatal deaths in the country each year. Neonatal tetanus infection remains the leading cause of neonatal death.

The majority of women in Bangladesh deliver at home with the assistance of untrained birth attendants, often female relatives. Unattended births are not uncommon, especially when it is a woman’s first child. Home births are managed according to traditional practices, some of which are harmful. Practices that increase the risk of infection include repeated vaginal manipulation, delivering the baby on an unclean surface, cutting the cord with unclean razor blades or pieces of bamboo, tying the cord with dirty ties, and putting cow-dung or ash on the cord. Tetanus infection is attributed to the influence of bad spirits, and no connection is made between birth practices and the infection.

Efforts to combat the problem of infection include increasing the tetanus toxoid coverage in women of reproductive age, training traditional birth attendants in clean delivery practices, and distributing and/or selling delivery kits containing basic requirements for clean delivery. The government of Bangladesh recently intensified its immunization outreach programmes, hoping to immunize most women of reproductive age against tetanus by the end of 1990. Coverage in some areas already exceeds 80%. Since 1979 the government, with support from UNICEF, has been training traditional birth attendants; the goal is to have one trained attendant for each of the 68 000 villages in Bangladesh. Several nongovernmental organizations currently assemble and distribute simple delivery kits to health

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workers and pregnant women in their catchment areas. Kits are either distributed free or sold at a subsidized rate. At the present time these kits reach only a small portion of the population.

Development and testing

In 1987 the government of Bangladesh and a UNICEF-funded project, concerned about the high rates of neonatal tetanus, asked the Christian Commission for Development in Bangladesh to develop a simple, inexpensive delivery kit for sale without subsidy to families in the rural areas. The challenge was to produce a kit that would appeal to potential buyers and sell at a low price.

The development and testing of the delivery kit took two years. This amount of time was necessary to ensure that input from potential buyers and users was included at every step of the development process. Encouraging buyers and users to participate in the design of the kit helped ensure that the ultimate product was appropriate to their needs and resources. At the end of the project, recommendations were made to the government about the kit’s contents, container design, price, and promotion and distribution strategies.

The first phase consisted of assessment activities. Female fieldworkers interviewed traditional birth attendants and conducted focus group discussions with women of reproductive age. Male fieldworkers had similar discussions with groups of men. The aim of these preliminary discussions was to learn something about current practices and to elicit suggestions for the design, contents, and a logo. People were asked what they would pay for such a kit, how they would recommend that it be promoted, and where they would buy it.

Following these discussions, prototype kits were assembled. The kit was packaged in a bright red and blue box with a picture of a nursing mother on the front. A box, which was the packaging favoured by most respondents during the preliminary discussions, is inexpensive when assembled locally and easy to display in a retail outlet.

A technical committee was established to give guidance to the Christian Commission about the kit’s contents and instructional messages. This committee was made up of representatives from the Commission, the government, the local UNICEF office, and large nongovernmental organizations.

They met on an ad hoc basis several times during the development and testing period. They discussed what items should be offered in the kit and decided which of these items should be clean and which sterile. They reviewed the pictorial instructions to ensure the messages were consistent with approved health policies.

Inside the box the contents were packaged in a plastic bag. These included the instructions, a small bar of soap, two pieces of gauze, a polythene sheet, and a small plastic packet containing three cord ties and a new razor blade, both of which had been autoclaved. The contents chosen were a compromise between what was feasible for the price and what potential buyers requested.

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The instructions were presented in a panel of pictures showing the recommended sequence for assisting with birth. The panel was folded, accordion style, with the first picture on top; this eliminated any possible confusion about reading from side to side.

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The messages were pre-tested with representative audiences to ensure they were understood. Whatever was unclear was revised by the artist and tested again until an 80% comprehension rate was achieved.

At one of the project sites, a packing unit was installed and the needed materials, bought in bulk, were stored there. A procedure was developed for the assembly of the kits: the polythene sheets and gauze were cut by hand, and the string and blade were autoclaved and put into a small plastic packet. The contents were all sealed in a large plastic bag inside the box in the order in which they were to be used, with the instructions on top. Local women were hired to do the packing of prototype kits. Protective clothing was worn, and proper hand-washing procedures were taught. A supervisor with a nursing background was hired to train and supervise the packers. She was also responsible for quality control measures.

Field trials were held in five representative areas of Bangladesh. Female fieldworkers identified pregnant women in these areas and distributed the delivery kits to them in their ninth month of pregnancy. They interviewed these women, using a standardized questionnaire, within a month after the birth. Women were asked if they had used the kit, if they had difficulty using or understanding any items, and if they would buy the kit in the future. They generally approved of the kit. Radio promotions and female group meetings were the usual ways of hearing about it, and they preferred to buy it through women’s groups and small shops.

The use of the polythene sheet was not well understood by many women. Because the committee wishes to encourage the use of a clean surface, the message was kept in the instructions. The picture was redrawn to make the message clearer.

Some changes were made in the design of the kit based on feedback from the trials. The next step was to field-test in five areas to validate some of the findings. The kits were sold through retail outlets, and shopkeepers made a small commission (15%) on each sale. Kits were promoted by means of posters, flyers or handbills, and rickshaw broadcasts. The latter were used instead of radio broadcasts, since the kits were only available in a small part of the area reached by radio. The rickshaw, decorated with posters, moved around public places and a passenger with a loudspeaker spread the message and distributed handbills. Fieldworkers also talked with key groups in the community and promoted use of the kit.

About 3000 prototype kits were developed for the test market: 400 per test site (200 per union), and the rest for contingency. An initial stock of five kits each was placed in small shops, pharmacies, and women’s committees and replaced on a one to one basis. The retail outlets paid 8.5 taka (US$ 0.25) per kit and sold them for 10 taka. Money was collected by the monitors on a regular basis, and the stock was replenished. A tally sheet was used for record-keeping.
Expected births in the target population were estimated. The test market aimed to sell enough kits to cover 50% of these births. Over 58% of the kits were sold by the end of the test market, well over the predicted 50% sales. Women’s groups were by far the favourite place of purchase. Small shops were also popular. Some purchases were made from rickshaw drivers. The percentage distribution of buyers was: nongovernmental organizations/health workers, 29.37%; men, 27.27%; pregnant women, 16.22%; traditional birth attendants, 11.46%; mothers (of pregnant women), 5.17%; mothers-in-law, 6.99%; other family members, 2.44%; and shopkeepers, 1.04%.

Conclusions and recommendations

The next step in this project is to scale up the production of kits to meet the existing demand. The Christian Commission for Development in Bangladesh will continue to produce them for its own catchment areas, and it is expected that other nongovernmental organizations may purchase them wholesale for distribution to their project areas.

The cost of the kit has been an issue. Preliminary studies indicated potential purchasers were willing to pay more than originally expected. The selling price during the market study was based on the amount most people said they would pay. It was anticipated that a lower price for the production of a larger number would offset the higher costs of the prototype kits. Unfortunately, inflation in Bangladesh has been high in the past year and the cost of some kit components has risen substantially.

To compensate for this rise, efforts were made to lower the cost of the kit without compromising the basic field-tested design. Local production of some kit components can help. The box is the first choice for this approach—with the label attached, this accounts for half the cost of the kit. The same box can be assembled locally for less than one-third the cost if the boxes are bought centrally. Besides being cheaper, this procedure provides another opportunity to employ local women.

Initially the kit will be distributed through existing networks of nongovernmental organizations. The promotion strategies will depend on the distribution network. For example, radio advertising cannot be used until an extensive commercial network has been established. In the interim, the kit can be promoted using posters, flyers, and possibly rickshaw broadcasts.

It is hoped that, in the future, large retailers will assist with kit distribution as a public service, supplying them to small shops at wholesale prices when delivering their own products. The shopkeeper would make a small profit on the sale of the kit.

This delivery kit will, over the years, change in design and cost, and the areas for distribution will expand. Bangladesh is a country of 110 million people, encompassing many types of consumers and markets; to meet their needs, it may be necessary to produce several versions of the kit at varying costs. As demand for the kit increases, different promotion and distribution strategies will be considered. The producing agency will continue to solicit input from consumers in order to make the kit appropriate to their needs and resources.

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