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Use of tetanus toxoid for the prevention of neonatal tetanus. 2. Immunization acceptance among pregnant women in rural Bangladesh

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In a rural area of Bangladesh, two injections of aluminium phosphate-adsorbed tetanus toxoid were offered to pregnant women within the context of a maternal and child health and family planning programme. Over the first 16 months of the programme, only 34.2% of pregnant women identified by field workers accepted full immunization and 4.8% accepted partial immunization. A comparison of acceptors and non-acceptors of immunization showed only small differences between the two groups in terms of their socio-demographic characteristics, such as age, religion, education, number of children, and occupation. The main reasons reported for non-acceptance were objection by husbands and mothers-in-law, fear of harming the fetus exacerbated by village rumours, and failure to inform the women sufficiently early during pregnancy. The most frequently reported reason for failure to accept the second injection among the partially immunized was the temporary migration of women from their usual residence for confinement in their parents' house. Confusion caused by local names for neonatal tetanus may have adversely affected perception by the community of the effectiveness of the vaccine. The study demonstrated that previous use of injectable and other contraceptives did not decrease subsequent acceptance of tetanus immunization. The families of tetanus immunization acceptors appeared also to adopt home-based oral rehydration therapy for diarrhoea more readily than the families of non-acceptors.

Tetanus neonatorum remains one of the leading causes of neonatal mortality in many developing countries (*1* – *4*). Active immunization against tetanus is very effective, and the advantages and disadvantages of the two strategic choices for its delivery—immunization of women during pregnancy and mass immunization campaigns of all women of reproductive age—have been discussed in a previous paper (*5*).

Even with full availability of services, however, there is no guarantee that an active immunization programme will have significant impact on neonatal mortality unless a significant proportion of women accept the service. The acceptability of services is a multi-faceted behavioural concept, incorporating such factors as community attitudes toward a disease, its prevention, and the health service system; willingness of those at risk to accept immunization; perceived effectiveness of immunization by the target population; and possible interactions between tetanus immunization and other health services.

In October 1977, the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B—formerly Cholera Research Laboratory) initiated an integrated maternal and child health and family planning (MCH-FP) programme in half of its Matlab field surveillance area. Active immunization of all pregnant mothers against tetanus neonatorum was an important component of this programme. Because the ICDDR,B maintained careful service records, operated an independent demographic/epidemiologic surveillance system in the same population, and could conduct field surveys to obtain in-depth information on specific subjects, a unique opportunity presented itself to examine some of the operational issues related to the delivery of tetanus immunization services to pregnant women. More specifically, the Matlab experience provided an opportunity to examine factors related to: (*a*) coverage of the MCH-FP programme; (*b*) changes of vaccine acceptance over time; and (*c*) interactions between tetanus

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immunization and other health interventions provided by the programme.

MATERIALS AND METHODS

The maternal tetanus immunization programme reported in this paper was conducted in Matlab thana, Comilla district, Bangladesh. The ICDDR,B has conducted epidemiological research in this area since 1963, including the conduct of five large-scale cholera vaccine field trials. A longitudinal vital registration programme has been in operation since 1966 and, since 1978, has covered 177 000 persons residing in 149 villages. The field methods of the demographic surveillance and diarrhoeal health services have been reported in several previous publications (*6*, *7*).

In October 1977, the ICDDR,B restructured a non-clinical village-based family planning programme (*8*) into an integrated village-based MCH-FP programme in 70 villages (population about 90 000) of the Matlab field surveillance area (*9*). The remaining 79 villages of the study area, with a population of about 86 000, served as a comparison area. To implement this new programme, 80 female village workers (FVWs) were recruited and trained. These new workers with a minimum of 7 years of education were trained to deliver MCH-FP services, each for a population of 1100 persons or 220 families in the neighbourhood of her residence. The FVWs visited each family fortnightly, covering about 22 families per day. The work of these FVWs was supported and supervised by 4 senior field assistants (SFAs) and 4 female health/family planning visitors (HFPVs) residing and operating out of four subcentres dispersed in the area. The subcentres served primarily as support and training facilities.

Initially, the Matlab MCH-FP programme provided modern contraceptive and related family planning services exclusively. By June 1978, immunization of pregnant mothers with two doses of tetanus toxoid was introduced.[a] FVWs identified all eligible women during fortnightly visits and informed them and their families about the advantages of tetanus immunization during pregnancy. Those who agreed to accept the vaccine were given two doses of an aluminium phosphate-adsorbed tetanus toxoid on a schedule of 0.5 ml after the 5th month of pregnancy and another 0.5 ml at least 4 weeks later, preferably at least 4 weeks before the expected date of delivery.

Details concerning the storage, transport, and delivery of the vaccine have been recorded elsewhere (*5*).

Field records of eligible married women (aged 15 – 44 years) and vaccines were regularly maintained by the FVWs. This register contained information on current reproductive status of the women, use of contraception, expected date of termination of pregnancy, schedule of tetanus immunization, and dates and number of immunizations given. For the purpose of the present analysis a list of all women of the MCH-FP programme villages who delivered a live birth or still birth during the period from 1 September 1978 until 31 December 1979 was prepared on the basis of the FVWs field register. Another independent list of mothers having still birth and live birth terminations during this period was generated by computer from the Matlab vital registration records. The demographic surveillance system operated independently of the FVWs registers. Therefore, matching of the two lists yielded information on the extent of programme coverage and completeness of identification of eligible women by the FVWs.

To obtain in-depth information on acceptance patterns, a sample survey was conducted in October–November 1979. The sampling procedure involved a systematic sample of 30% of the MCH-FP villages. From the FVWs field registers, a list of all women who delivered a live birth or still birth in these villages between the period from 1 September 1978 until 30 August 1979 was obtained. These lists generated 250 full-acceptors (women who received two injections) of the tetanus vaccine during pregnancy, who together with another 250 non-acceptors from the same villages were selected for in-depth interviews. Because of their limited number, all of the 79 partial acceptors (women who received one injection) from the entire programme area were included in the survey.

The interviews, which were carried out by trained female interviewers from ICDDR,B, consisted of completing a questionnaire that had been developed through discussion with investigators and field supervisors and had been pre-tested among 15 mothers in non-selected villages. The questionnaire solicited information on selected socio-demographic characteristics of the respondents, their past experience of neonatal tetanus deaths, reasons for acceptance or non-acceptance of the vaccine, and their intention as regards future vaccine acceptance. Successful interviews were completed for 210 full acceptors, 72 partial acceptors, and 241 non-acceptors. The reason for unsuccessful interviews was non-availability of the respondents at home. There were no refusals.

In order to compare the reasons given by the mothers for partial acceptance and non-acceptance with the perceptions of the FVWs, the FVWs of the relevant villages were also interviewed. The interview was conducted by the supervisory staff at fortnightly meetings in the respective subcentres. Each FVW identified each partial acceptor or non-acceptor and indicated the reasons, case-by-case, for non-accep-

[a] Initially, three doses were offered, but the two-dose schedule was initiated beginning in July 1979.

tance as recorded in her field diary or, in some cases, from recall.

Beginning in January 1979, seven months after the initiation of the tetanus immunization programme, a field trial of home-based oral rehydration therapy for diarrhoea was mounted within the context of the MCH-FP programme. The FVWs trained about 1400 volunteer village women (*bari* mothers) to prepare, distribute, and manage the use of oral rehydration fluid within a *bari*, a cluster of patrilineally related households. The details of this oral rehydration programme are presented elsewhere (*10*). In order to examine possible interactions between the tetanus immunization and the oral rehydration health services, 30% of the 1978 tetanus immunization acceptors were selected through a systematic random sampling procedure. An equal number of non-acceptors matched by number of living children and by village of residence were also selected. To determine oral rehydration therapy acceptance and use in relation to previous acceptance of tetanus immunization, acceptance of oral rehydration therapy and number of packets of oral rehydration salts consumed by the families of the sampled acceptors and non-acceptors were noted from field records over the first six months of 1979.

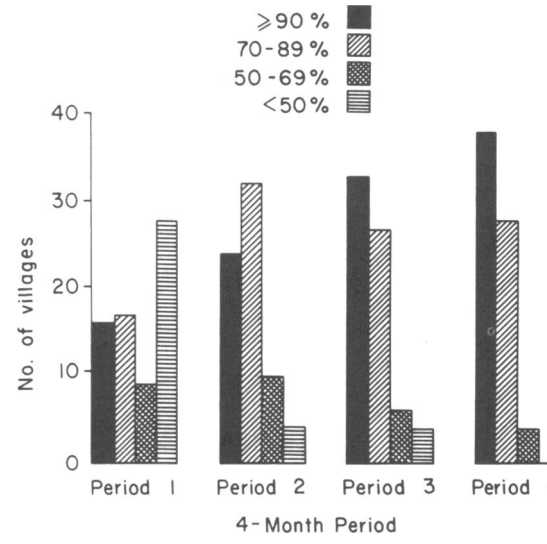

Fig. 1. Number of villages, according to rate of identification of women eligible for immunization.

RESULTS

Service coverage

In the Matlab MCH-FP area, there were 4393 women who delivered a live birth or still birth during the 16-month period from 1 September 1978 to 31 December 1979. Table 1 shows these birth events by four 4-month periods. The rate of identification of these eligible women by the FVWs and the rate of acceptance are also shown, and indicate that the identification rate increased steadily as the programme matured.

Identification of pregnant women showed variation by village, but again improvement was seen as the programme matured (Fig. 1). Inter-village variation was probably due to differential performance of FVWs in monitoring pregnancies and maintaining accurate field registers. The observation that 28 villages during the fourth 4-month period still had identification rates of 70 – 89% suggests that, while coverage may attain high levels, 100% identification of all eligible women would be very difficult to attain, for reasons described later.

Vaccine acceptance

Table 1 also presents the vaccine acceptance rate by 4-month period. The higher acceptance rate in the first 4-month period is an artefact, since acceptance rate (as defined in Table 1) applies only to identified women. Had all eligible women been considered, the acceptance rates would have been uniformly lower in all periods, with the lowest in the first 4-month period.

Table 2 examines whether acceptance was associated with selected sociodemographic characteristics of the eligible women. A comparison of acceptors

Table 1. Identification of eligible women by female village workers and rate of acceptance of tetanus immunization during four 4-month periods

	Period 1	Period 2	Period 3	Period 4	Total
No. of registered deliveries	1185	928	831	1449	4393
No. of mothers identified by FVWs	643	759	730	1284	3416
Identification rate (%)	54.3	81.8	87.8	88.6	77.8
Percentage distribution of identified women:					
Full acceptors[a]	43.1	30.7	34.8	31.5	34.2
Partial acceptors	5.7	2.8	2.9	6.5	4.8
Non-acceptors	51.2	66.5	62.3	62.0	61.0

[a] Full acceptance means acceptance of 2 injections and partial acceptance means acceptance of 1 injection.

Table 2. Selected characteristics of full and partial acceptors and non-acceptors of tetanus immunization during pregnancy

Characteristics	Full and partial acceptors (n = 282)	Non-acceptors (n = 241)
Age (years)		
Mean	26.7	26.1
Median	26.7	25.7
Religion (%)		
Hindu	17.4	14.1
Muslim	82.6	85.9
Education of women (%)		
5th grade and above	14.5	10.4
1 – 4 years	22.3	24.1
No schooling	63.2	65.5
No. of children (mean)		
Currently living	2.9	3.0
Total births	3.9	3.8
Occupation of household head (%)		
Agriculture	38.3	43.6
Service	9.2	7.9
Business	16.7	14.5
Other	35.8	34.0

(full and partial) and non-acceptors according to age, religion, education, number of children, and occupation of the household head showed only small differences between the two groups. As compared with non-acceptors, acceptors were more often Hindu, had a higher level of education, and the household heads were more often in service or business occupations, but the differences are small and statistically non-significant.

Table 3 presents the reasons for non-acceptance of tetanus immunization given by the 241 non-acceptors. The main reported reasons for non-acceptance were client-related (76.8%): objections by husbands or mothers-in-law (34.7%); fear of women due to lack of experience with injections during pregnancy (26.6%); or fear from village rumours (6.3%); and various other client-related reasons (9.2%). Programme-related reasons (18.6%) reported by non-acceptors were failure of workers to inform eligible women about tetanus immunization (13.6%) and too late identification of pregnant women (5.0%). In an independent case-by-case review of these 241 non-acceptors, the reasons for non-acceptance reported by the responsible FVWs were similar (Table 3). The FVWs tended to under-report programme-related reasons (3.7%) and to attribute non-acceptance to unknown "other" factors (27.8%).

Reasons reported for non-acceptance of the second dose are reported in Table 4 since these may differ from the reasons for total non-acceptance. Interestingly, the most frequently reported reasons were client-related (69.4%) but differed from those reported by the total non-acceptors. In 31.8%, failure to accept the second booster was due to movement out of the study area ("moved to parents' house"). This practice is customary in Bangladesh, particularly among young women during their first pregnancy. Another important reason for failure to accept the second immunization was the unexpected termination of pregnancy before the second immunization was due (12.4%).

Acceptance trends

One disappointing aspect of the acceptance pattern is the failure of acceptance to increase over time as the programme matured. Two factors related to this failure are examined: possible failure of the client to understand the effectiveness of the immunization in eradicating neonatal tetanus, and worker performance. The data presented in Table 5 may have some bearing on client perception of the effectiveness of the immunization programme against tetanus neonatorum. In the Matlab study area, the clinical syndrome of neonatal tetanus is not identified by the local people by a single name only. Instead, three names are utilized: *alga*, *takuria*, and *dhanustonkar (tonkar)*.

Dhanustonkar is believed to be a disease caused by evil spirits and is defined as a cluster of symptoms including cramping, stiffness of the body, lockjaw (responsible for the refusal of breast milk in very young children), and changes in body colour. In Bangla, *donuk* literally means "bow", as a reference to the emprosthotonos sometimes seen in tetanus.

Takuria is also believed to be a disease caused by evil spirits. However, the spectrum of symptoms described is broader than in *dhanustonkar*. It also includes cramping, stiffness of the body, lockjaw, and changes of body colour. The use of the name *takuria* seems to be restricted to neonates or very young children, while *dhanustonkar* may also be used in relation to adults.

Alga is literally the evil force causing a broad category of diseases of which tetanus and tetanus neonatorum form part. Sudden death and convulsions (whatever their etiology) are also caused by *alga*. For this reason, *alga* is the first and most often quoted name for what Western medicine defines as tetanus. Therefore, *dhanustonkar* and *takuria* are caused by *alga* and are themselves considered as *alga*. For methodological reasons, it was decided to use the three names as mentioned first by the villagers,

Table 3. Reasons for non-acceptance of tetanus immunization during pregnancy as reported by clients and female village workers

Reason	Reported by clients		Reported by FVWs	
	No.	%	No.	%
Programme-related				
Worker failed to inform mothers	33	13.6	1	0.4
Women identified too late in pregnancy	12	5.0	8	3.3
Total	45	18.6	9	3.7
Client-related				
Objection by husband/mother-in-law	84	34.7	78	32.4
Mother's fear, no experience with injection	64	26.6	28	11.6
Mother's fear, from rumours	15	6.3	11	4.6
No need, no previous tetanus death	11	4.6	6	2.5
Mothers moved to parents' residence	7	2.9	18	7.5
Mother's illness	4	1.7	3	1.2
Mother's disliking	–	–	21	8.7
Total	185	76.8	165	68.5
Other				
Other reasons	11	4.6	13	5.4
Don't know	–	–	54	22.4
Total	11	4.6	67	27.8
All reasons	241	100.0.	241	100.0

although the problems linked with their use were known.

Since potential vaccine acceptors were informed that the vaccine was essentially 100% effective against tetanus (using local names), it is interesting to examine the impact of the immunization programme on these causes (local names) of death. This is done in Table 5, where the attributed causes of neonatal deaths are noted according to the mother's acceptance of tetanus immunization during the pregnancy. In comparison with the non-immunized group, mothers who were immunized experienced lower *alga*, *dhanustonkar*, and *takuria* mortality rates. The neonatal mortality rate due to "other" causes was similar in the vaccine and non-vaccine groups. This implies that, while the vaccine reduced substantially neonatal tetanus deaths attributed to all three of the "causes", many mothers who accepted the vaccine still experienced *alga*, *dhanustonkar*, or *takuria* neonatal deaths even after accepting the vaccine.

If the performance of the village workers was a major factor in explaining the failure of acceptance rates to increase over time, one might expect a relationship between the identification rates and the acceptance rates achieved by individual workers. This is examined in Fig. 2, where the identification and acceptance rates acheived by 80 FMVs are plotted using logit transformation. In the first 4-month period, workers with high identification rates also had high acceptance rates, but by the fourth 4-month period, the relationship became less marked. The correlation in the first period suggests that some workers were indeed better than others in terms of identifying mothers and promoting acceptance, but the data indicate that as worker performance improved and coverage increased, the acceptance rates remained constant, probably reflecting client reluctance for the reasons noted in Tables 3 and 4.

Vaccine acceptance among non-pregnant women

Given the disappointing vaccine acceptance rates during pregnancy and the lack of improvement over the 16 months of programme operation, it was thought worth while to compare the 1978 – 79 acceptance rate with the rates obtained in 1974 when an

Table 4. Reasons for non-acceptance of the second tetanus immunization during pregnancy

Reason	Number	%
Programme-related		
Birth before second immunization due	9	12.4
Workers failed to bring vaccine	3	4.2
Total	12	16.6
Client-related		
Mothers moved to parents' residence	23	31.8
Objections of husbands/mothers-in-law	11	15.3
Mothers' fear, heard rumour	9	12.5
Mothers' illness	4	5.6
Mothers' objection	3	4.2
Total	50	69.4
Others		
Miscarriage	4	5.6
Other reasons	3	4.2
Don't know or no response	3	4.3
Total	10	14.0
All reasons	72	100.0

Table 5. Number of neonatal deaths and mortality rate (per 1000 live births) among live-birth cohort, according to tetanus immunization of mother during pregnancy and attributed cause of death

Attributed cause of death	Immunized		Non-immunized		Reduction (%)
	No.	Rate	No.	Rate	
Alga	20	26.2	118	56.2	53.4
Dhanustonkar	3	3.9	19	9.9	60.6
Takuria	1	1.3	6	2.9	55.2
Other	7	9.2	20	9.5	3.2
Total	31	40.6	163	77.6	47.7

attempt was made to immunize all non-pregnant women as part of a cholera toxoid field trial (*11*). In 1974, teams of vaccinators undertook a double-blind immunization campaign, randomly assigning all non-pregnant women to either a cholera vaccine group or to a control group (aluminium-phosphate tetanus–diphtheria toxoid). Acceptance data in 1974 and 1978 – 79 are not strictly comparable, since the 1974 vaccinees were informed that the immunizations were being offered as part of a field test of a new cholera vaccine.

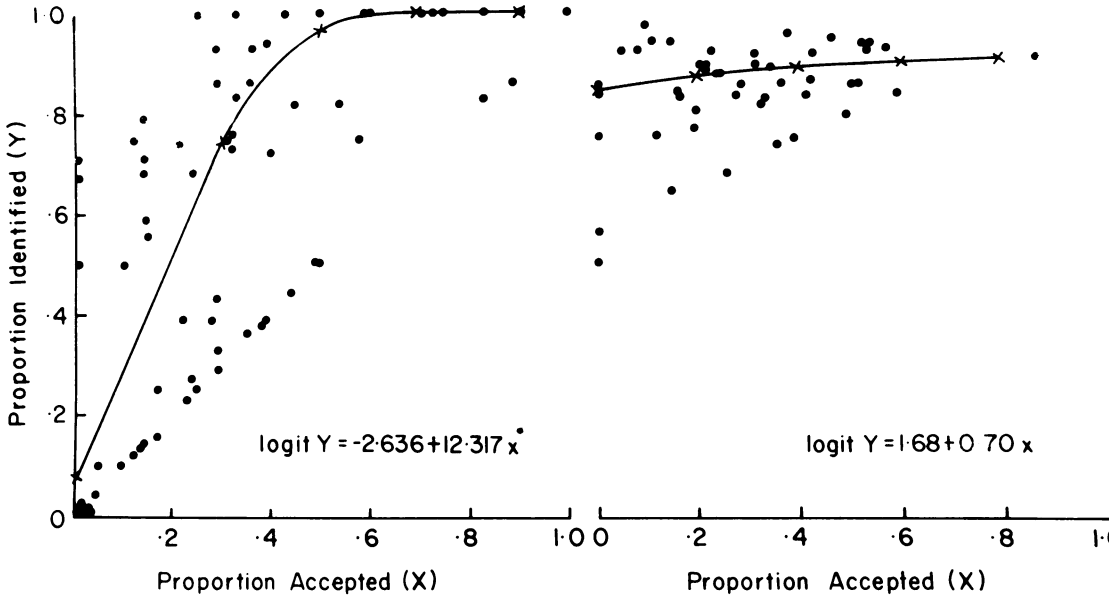

Fig. 2. Regression coefficients for relation between rate of identification of eligible women and acceptance of vaccination. Left: first 4-month period; right: fourth 4-month period.

Table 6. Rates of full and partial acceptance of tetanus and cholera vaccine by non-pregnant females according to age[a]

Age (years)	Tetanus vaccine				Cholera vaccine			
	Full	Partial	None	Total	Full	Partial	None	Total
⩽ 19	56.0	15.8	28.2	100.0 (1022)	51.2	17.6	31.2	100.0 (1000)
20 – 39	49.2	13.5	37.3	100.0 (451)	49.8	15.9	34.3	100.0 (464)
⩾40	60.3	17.8	21.9	100.0 (343)	59.9	20.5	19.6	100.0 (332)
Total	55.1	15.6	29.3	100.0 (1816)	52.4	17.7	29.9	100.0 (1796)

[a] Full acceptance means acceptance of 2 injections and partial acceptance means acceptance of one injection. Figures in parentheses represent the number of subjects.

Table 6 shows the rate of vaccine acceptance among non-pregnant women in 1974. Given the double-blind nature of the 1974 trial, no differences are noted between the cholera and tetanus acceptance rates, as expected. No differences were noted also according to the age of the women. The total non-acceptance group accounted for fewer than one-third (29.3%) of all eligible women.

Interactions with other services

The evolution of the Matlab MCH-FP programme enabled us to examine two questions related to the interaction of tetanus immunization services with other health services: (*a*) any adverse consequences resulting from one year of family planning services, including a long-acting injectable contraceptive, on tetanus immunization acceptance during pregnancy; (*b*) any beneficial effect of the tetanus immunization programme on subsequent adoption and use of oral therapy for diarrhoea.

Table 7. Use of contraception,[a] by method, by acceptors and non-acceptors of tetanus immunization during pregnancy

	Total any method	Method			Never used	Total
		Pills	Injectables	Others		
Acceptors	18.8	10.6	5.7	2.5	81.2	100.0 (282)
Non-acceptors	14.1	8.3	5.4	0.4	85.9	100.0 (241)
Total	16.6	9.6	5.5	1.5	83.4	100.0 (523)

[a] Use any time before this pregnancy. The figures in parentheses are the numbers of subjects.

Table 7 compares the use of contraceptives by acceptors and non-acceptors of tetanus immunization. The differences are very small, and do not support the hypothesis that previous provision of injectable contraceptives, particularly experience of their side-effects, discouraged women from accepting tetanus immunization.

If it is assumed that the incidence of diarrhoea was similar in the two groups (actual data are not available), the data collected on the use of oral rehydration salts (ORS) show that such use was significantly greater ($P < 0.05$), during the first six months when ORS were available, among the families of immunization acceptors than among non-acceptors. This difference was seen in both the proportion of users and the number of packets of ORS used. Whether such an association is due to family differences or whether the increased rapport between the village health workers and families consequent upon delivery and acceptance of tetanus immunization services facilitated subsequent use of oral rehydration therapy is not known.

DISCUSSION

Some discussion of the unique character of the Matlab study area and the ICDDR,B MCH-FP programme is in order before the study's findings are interpreted. Over the past 17 years, the ICDDR,B has conducted 5 cholera vaccine trials, has operated a demographic surveillance system, and has provided diarrhoeal treatment services to the population. The interactions and rapport between the ICDDR,B and

the community are therefore strong and intimate. Finally, the Matlab MCH-FP programme offered only family planning services, including, in the first nine months of the programme, injectable contraceptives. Tetanus immunization was incorporated later, and even later still oral therapy services were offered at the community level.

It should be recognized that the Matlab MCH-FP programme was basically an experimental research programme supported by sophisticated, well organized administrative, scientific, and logistic resources of the ICDDR,B. As such, the results we obtained will not necessarily be applicable in other areas under entirely different circumstances.

However, the Matlab experience reported in this paper included some special characteristics which make an analysis of the results of particular interest. First, the operation of an independent demographic and epidemiological data collection systems in the same population provided a unique and reliable data base for the assessment of programme coverage and acceptance rates. Secondly, the sequential introduction of specific health services in the MCH-FP programme permitted examination of possible influences of one activity on another. Thirdly, the implementation of service delivery by an organization with solid administrative and scientific experience ensured adequate "cold-chain" procedures for vaccine preservation and a sufficiently effective delivery system to assess factors associated with programme performance. Finally, the Matlab study area also witnessed in 1974 a cholera vaccine trial in which tetanus immunization was provided to non-pregnant women as a control vaccine. Comparison of acceptance was therefore possible between the two strategies of immunizing pregnant versus non-pregnant mothers in the same population.

The study's findings show that despite a specially designed delivery system, not more than 90% of the eligible pregnant women were identified. Various factors were responsible: the field workers had a heavy work load; some Matlab mothers, particularly young women, were uncooperative in informing workers of pregnancy because of shyness or superstition; some women conceived during postpartum amenorrhoea, and could not be certain of pregnancy until very advanced stages; and migration of women into or out of the study area made timely identification difficult.

Even with timely identification and ready availability of vaccine in the homes, vaccine acceptance by only one-third of the identified women was disappointingly low. An inescapable conclusion is that client-related factors were primarily responsible and that, at least in Matlab, there was strong reluctance of the women to accept immunization during pregnancy for fears of harming the fetus. Improved coverage was not accompanied by improved acceptance levels. It is possible that the community's imprecise perception of tetanus deaths inhibited a positive trend, since some neonatal deaths among vaccinees would have been wrongly ascribed to tetanus.

The hypothesis that previous provision of family planning services, particularly injectable contraceptives, may have strengthened resistance to immunization during pregnancy was not confirmed. In contrast, among randomly selected households, those who had accepted tetanus immunization appeared subsequently to adopt oral rehydration therapy for diarrhoea more readily than non-acceptors. This may have ben a result of their satisfactory experience with tetanus immunization or simply that some households are likely to adopt a variety of modern medical technologies more readily than others.

Overall, the study's findings are strongly suggestive that a tetanus immunization programme aimed exclusively at pregnant mothers is not likely to be effective in cultural settings such as Matlab. But there are constraints also to the mass immunization campaign approach, and the acceptance rate in the Matlab cholera vaccine trial in 1974 was only slightly higher than 55%. Moreover, the vaccine trial was conducted at the expense of regular longitudinal surveillance and health service work being undertaken in Matlab. In the rural Bangladesh setting, our recommendations would be for mass immunization campaigns backed up by immunization during pregnancy. The immunization campaigns would have the advantages of easier logistics in terms of maintenance of the "cold-chain" and possibly of higher levels of vaccine acceptance by non-pregnant women. The human resources devoted to these campaigns, however, should not disrupt the long-term development of village-based basic health services, which would also identify and offer vaccine to pregnant women. It should be recognized that it will take many years before an effective rural health infrastructure will be sufficiently developed for the latter approach to shoulder most of the load associated with protecting all neonates against tetanus.

RÉSUMÉ

UTILISATION DE L'ANATOXINE TÉTANIQUE POUR LA PRÉVENTION DU TÉTANOS NÉONATAL. 2. ACCEPTATION DE LA VACCINATION PAR LES FEMMES ENCEINTES D'UNE ZONE RURALE DU BANGLADESH

En juin 1978, le Centre international de recherche sur les maladies diarrhéiques du Bangladesh (International Centre for Diarrhoeal Disease Research, Bangladesh-ICDDR,B) a entrepris un programme d'administration d'anatoxine tétanique à des femmes enceintes dans le cadre de la mise en œuvre d'un programme de santé maternelle et infantile et de planification familiale au niveau du village dans la région de Matlab au Bangladesh. Les femmes agents de santé du ICDDR,B ont identifié au cours de leur visite bimensuelle à domicile les femmes enceintes pouvant prendre part au programme et ont vacciné les volontaires.

Le taux d'identification des femmes enceintes a progressé de façon continue au fur et à mesure du déroulement du programme, pour atteindre plus de 88% de toutes les femmes enceintes lors du quatrième et dernier mois. Le taux d'acceptation du vaccin est toutefois resté faible: seules 34% des femmes identifiées ont accepté une vaccination complète (deux injections) et 5% environ ont accepté une vaccination partielle (une injection). La comparaison des femmes volontaires et de celles ayant refusé la vaccination antitétanique montre peu de différences entre les deux groupes en ce qui concerne les caractéristiques socio-démographiques tels que l'âge, la religion, l'éducation, le nombre d'enfants et l'activité professionnelle. La principale raison indiquée du refus de la vaccination était l'objection soulevée par les maris et les belles-mères, la peur liée au manque d'expérience en ce qui concerne les injections de vaccins au cours de la grossesse, la peur due aux rumeurs qui circulaient dans les villages, et le fait que les agents de santé n'ont pas informé les femmes enceintes suffisamment tôt de la vaccination. La raison la plus fréquemment indiquée de refus de la seconde vaccination était la migration temporaire des femmes qui avaient quitté leur domicile pour se réfugier chez leurs parents.

Dans cette étude, l'acceptation de la vaccination a peut-être été limitée par des confusions liées aux noms locaux du tétanos néonatal. Les femmes ont été informées que la vaccination antitétanique les protégerait contre trois syndromes traditionnels (appelés en bengali *alga*, *takuria* et *dhnus-tonkar*) alors qu'en fait ces syndromes sont souvent liés à des maladies n'ayant pas de rapport avec le tétanos. Le programme de vaccination n'a donc que partiellement réduit la mortalité généralement attribuée au tétanos néonatal.

Les résultats de cette étude ne viennent pas confirmer l'hypothèse selon laquelle les effets secondaires précédemment associés à l'administration de contraceptifs injectables avaient découragé les femmes de se faire vacciner contre le tétanos. Les familles des femmes ayant accepté la vaccination semblent adopter plus rapidement la réhydratation orale en cas de diarrhée que les familles des femmes n'ayant pas accepté la vaccination antitétanique.

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