Research/Recherche

Tetanus toxoid immunization coverage among women in Zone 3 of Dhaka City: the challenge of reaching all women of reproductive age in urban Bangladesh

H. Perry, R. Weierbach, I. Hossain, & R. Islam

Neonatal tetanus is still an important public health problem in both urban and rural Bangladesh, with an estimated 41,000 cases occurring annually. This article analyses the coverage of tetanus toxoid (TT) immunizations among women of reproductive age in Zone 3 of Dhaka City in 1995. Although 85% of women with a child under 1 year of age had received two TT immunizations, only 11% of women of reproductive age had obtained the complete series of five TT immunizations and only 52% of women of reproductive age had received one or more TT immunizations. Access to TT immunization, as defined by having had at least one such immunization, was lower among women aged over 30 years and also among those aged under 20 years, especially those who were not yet married or who had not yet become pregnant.

Characteristics associated with TT immunization status included the following: educational level of the woman, distance from the nearest immunization centre, and level of contact with family planning field workers. Additional characteristics that influenced women's TT immunization status included age, marital and working status, recency of migration from rural to urban area, and number of children. The relationships were complex and varied depending on the number of TT immunizations received (one or two) and on the type of analysis being carried out (bivariate or multivariate).

The findings point to the need for a broad-based campaign to promote access to TT immunization as well as to promote the completion of all five TT doses in Bangladesh. Reducing missed opportunities for promotion of immunization as well as targeting home visitation of women in need of additional immunizations constitute further approaches to improving coverage. Although TT coverage rates were only marginally lower among women in slum households, such women were more likely than those in non-slum households to be pregnant and hence more likely to bear a baby at risk of neonatal tetanus. Furthermore, the environment of slum households, where deliveries normally take place, is more conducive to the development of neonatal tetanus among unprotected neonates; a strategy of focusing on slum households is therefore also needed.

Introduction

Since the mid-1980s, Bangladesh has markedly increased the proportion of mothers who have received tetanus toxoid (TT) immunizations. Nationally, the coverage for women with a child aged <1 year who have received two TT immunizations (maternal TT2 immunization) rose from 2% in 1985 to 86% in 1995 (1, 2), and the proportion of women receiving a TT immunization during their pregnancy increased from 5% to 67% over the same period (3). Nevertheless, Bangladesh still has an estimated 41,000 cases of neonatal tetanus annually, the fourth highest in the world, after India, China, and Pakistan (4). In Bangladesh as a whole, neonatal tetanus is estimated to cause 15% of all neonatal deaths (5) and in the urban areas of the country it is estimated to cause 9% of deaths among under-5-year-olds (5).

1 MCH-FP Extension Project (Urban), International Centre for Diarrhoeal Disease Research, Dhaka, Bangladesh; and Johns Hopkins School of Hygiene and Public Health, Baltimore, MD, USA.
2 BASICS Project, Dhaka, Bangladesh.
3 MCH-FP Extension Project (Urban), International Centre for Diarrhoeal Disease Research, Dhaka, Bangladesh.
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In 1995, the maternal TT2 coverage rate for all urban areas of Bangladesh was identical to that for the country as a whole (2). Although there has been a substantially lower coverage in the Dhaka slums than the non-slum areas, there is evidence that the gap is diminishing. Between 1990 and 1993, TT2 coverage levels for Dhaka as a whole improved by 5%, while those for the slums improved by 23% (6, 7).

In Bangladesh there is limited information about TT coverage among women in urban areas and about the characteristics of such women, particularly those of reproductive age. Typically, TT coverage statistics have been based on data collected only from currently or recently pregnant women.

Urban TT coverage in Bangladesh is important for several reasons. Firstly, the urban population is growing quite rapidly (6–9% per year) (8, 9). Secondly, 79% of births that occur in urban areas of Bangladesh take place in the home (10). Third, ≥20% of urban households are located in slums (MCH–FP Extension Project (Urban), ICDDR, Bangladesh, unpublished data, 1997), where conditions are not conducive to clean deliveries. Finally, neonatal tetanus accounts for a considerably higher proportion of deaths among children aged under 5 years in urban areas than in rural areas: 9% versus 5% (5).

The present article describes the immunization coverage of women of reproductive age in one major urban area of Bangladesh, compares the coverage in slum and non-slum populations, and identifies characteristics associated with immunization status. Issues related to the quality of immunization services and to the coverage of childhood immunizations in Zone 3 of Dhaka City have been addressed elsewhere (11–14).

Methods

The methods used were the same as those reported for an analysis of childhood immunization coverage in Zone 3 of Dhaka City (14). During the third quarter of 1995, the Urban Panel Survey of the MCH–FP Extension Project (Urban), International Centre for Diarrhoeal Disease Research, Bangladesh, collected data on immunizations received by women of reproductive age (15–45 years). These data form the basis of the present article. The survey respondents included 6527 women aged 15–45 years. Of these women, 707 had a child under 1 year of age.

Each respondent was asked whether she had a maternal immunization card; if she did and the card was available the interviewer recorded the dates of the immunizations; if no maternal immunization card was available, the interviewer asked the mother how many TT immunizations she had ever received. Information was collected only for immunizations obtained since adolescence. Since women had often obtained some of their TT immunizations a number of years previously, the dates of the TT immunizations were not recorded. Coverage rates are based on the number of TT immunizations reported by the mother.

Results

Coverage by number of doses, target group, and slum/non-slum status

A total of 85% of women with a child under 1 year of age stated that they had had at least two TT immunizations (TT2), as did 64% of married women who had ever been pregnant and 47% of all women of reproductive age (Fig. 1). Access to TT, as defined by receipt of at least one TT immunization, was 89% for women with a child under 1 year of age, but only 52% for all women of reproductive age. A total of 21% of all women with a child under 1 year of age had obtained five TT immunizations, and 24% had a TT card at home. Only 7% of all women of reproductive age had a TT card at home. Drop-out rates from TT1 and TT2 were only 3–11%, but those from TT1 to TT5 were 70–82%, depending on which group of women was included in the calculation.

The slum/non-slum differences were greater among women with a child under 1 year of age than among women who had ever been pregnant or among all women of reproductive age (see Fig. 2). In the last two groups, the differences in TT2 coverage
were 5–6%, while among women with a child under 1 year of age the difference was 15%. Of particular note is that coverage among all women of reproductive age living in slums was slightly higher than among women living in non-slum areas. As discussed below, this arose because unmarried women of reproductive age live predominantly in non-slum households, and unmarried women have much lower levels of TT coverage. Drop-out rates among slum women were only slightly higher than among non-slum women.

**Relationship between sociodemographic and programme characteristics and TT2 coverage**

As shown in Table 1, a number of sociodemographic and programme variables were associated with TT2 coverage of mothers who had a child under 1 year of age, in both the bivariate and the multivariate analyses. In the bivariate analysis, the coverage was lower for the following groups of women: mothers who were born in an urban slum or rural area; mothers who had no formal education; mothers whose husbands were unemployed or who had unskilled manual jobs; mothers living in households with a monthly income of less than Tk 5000 (ca. US$ 125); and mothers living in slum households. Mothers who reported fewer than three visits from a family planning field worker during the previous year also had lower coverage. All of these variables were statistically significantly associated with maternal TT2 coverage, with odds ratios (OR) in the range 0.12–0.58.

If the presence of a child aged <1 year is taken as a proxy indicator of pregnancy, 59% of pregnant women in Zone 3 lived in a slum household, while only 42% of women of reproductive age in this zone did so. Thus, 15% of women of reproductive age who lived in a slum household were pregnant, compared with only 8% of such women who lived in a non-slum household. TT2 coverage among mothers with a child aged <1 year living in slum households was 80%, compared with 94% among similar mothers living in non-slum households. A total of 84% of the mothers of children under 1 year of age in Zone 3 who had not obtained at least two TT immunizations lived in slum households.

The findings of the multivariate logistic regression analysis (Table 1) show a number of similarities with the bivariate analysis. For example, the multivariate odds ratios for mother's birthplace, mother's education, and home visitation by family planning field workers are similar to the bivariate odds ratios. Distance of the mother’s household to the nearest immunization centre had no bivariate association with maternal TT2 coverage, but in the multivariate analysis, living >0.4 km from the nearest immunization centre was associated with a reduction in the TT2 coverage rate by a factor of 0.47.

Several variables were significantly related to TT2 coverage in the bivariate analysis but not in the multivariate analysis: length of time mother had been living in Dhaka, husband's occupation, and slum/non-slum household status. We examined the reasons for these differences between the bivariate and multivariate analyses for specific predictor variables. The effect of length of time living in Dhaka was mediated by birthplace: most of the women who had been living in Dhaka for less than 5 years were born in rural locations, and after controlling for birthplace, length of time living in Dhaka had no influence on TT2 coverage. Mothers with no education were more likely to be divorced, separated, or widowed than mothers with some education; thus, the effect of maternal education on TT2 coverage appeared to be mediated by marital status. The effect of husband's occupation on TT2 coverage was mediated by the wife's birthplace and educational level, as well as by the number of field worker contacts: husbands with lower occupational status were more likely to be married to women who were born in rural or urban slum locations, to women with lower educational status, and to women who reported lower levels of contact with field workers. Finally, the effect of slum/non-slum household status on TT2 coverage became insignificant after controlling for the effect of birthplace and woman's educational status. Birthplace in rural or urban slum locations and lower educational status were both strongly correlated with slum household status.
Table 1: Relationship between family background, household, and programme variables and TT2 coverage rates among women with a child under 1 year of age

<table>
<thead>
<tr>
<th>Characteristic/variable</th>
<th>Relationship with maternal TT2 immunization coverage</th>
<th>Bivariate Odds ratio</th>
<th>Logistic regression Odds ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Family background</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother's birthplace</td>
<td>Mothers born in urban slums or in a rural village had a lower coverage than mothers born in urban non-slum locations</td>
<td>0.12 (0.02–0.37)*</td>
<td>0.28 (0.18–0.46)</td>
</tr>
<tr>
<td>Mother's age</td>
<td>NA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of children living in the family</td>
<td>NA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother's educational level</td>
<td>Mothers with no formal education had a lower coverage than mothers with some education</td>
<td>0.23 (0.13–0.37)</td>
<td>0.23 (0.14–0.38)</td>
</tr>
<tr>
<td>Length of time mother had been living in Dhaka</td>
<td>Mothers living in Dhaka for &lt;5 years had a lower coverage than mothers living in Dhaka for a longer period</td>
<td>0.53 (0.33–0.87)</td>
<td>NS^c</td>
</tr>
<tr>
<td>Mother's marital status</td>
<td>NA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother's employment status</td>
<td>NA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Father's occupation</td>
<td>Mothers whose husbands were unemployed or had unskilled manual jobs had a lower coverage than mothers whose husbands had manual skilled or nonmanual jobs</td>
<td>0.42 (0.26–0.67)</td>
<td>NS</td>
</tr>
<tr>
<td><strong>Household</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average reported monthly income</td>
<td>Mothers living in households with a monthly income of &lt;Tk 5000 (&lt;US$ 125) had a lower coverage than mothers living in households with higher incomes</td>
<td>0.29 (0.16–0.54)</td>
<td>Not included in regression model</td>
</tr>
<tr>
<td>Slum household status</td>
<td>Mothers living in slum households (Household Index score &lt;6) had a lower coverage than mothers from households with higher scores</td>
<td>0.24 (0.13–0.43)</td>
<td>NS</td>
</tr>
<tr>
<td><strong>Programme</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distance to nearest EPI centre</td>
<td>Mothers living in households &gt;0.4 km from the nearest EPI centre had a lower coverage than mothers living ≤0.4 km</td>
<td>NS</td>
<td>0.47 (0.25–0.85)</td>
</tr>
<tr>
<td>Home visitation by field workers</td>
<td>Mothers who reported 0–2 field worker visits during the previous year had a lower coverage than mothers who reported ≥3 visits</td>
<td>0.38 (0.24–0.60)</td>
<td>0.28 (0.18–0.46)</td>
</tr>
</tbody>
</table>

* Figures in parentheses are 95% confidence intervals.
^c NA = no association.
^c NS = not statistically significant.

In the logistic regression analysis, only one two-way interaction was statistically significant: the combined effect of mother’s educational level and number of field worker contacts on TT2 coverage. The effects of the number of field worker contacts on TT2 coverage was confined to those mothers with no education. Among such mothers, TT2 coverage was only 57% if the mother reported 0–1 field worker visits, but 87% if the mother reported two or more visits. However, for mothers with some education, TT2 coverage did not vary with the number of field worker visits.

A higher visitation rate from field workers apparently offset, to a large degree, the disadvantage of being further away from an immunization centre. Also, the effect of distance from an immunization centre on maternal TT coverage was nearly eliminated for those mothers who received more visits (data not shown).

Relationship between sociodemographic and geographical characteristics and access to TT immunization by women of reproductive age

Only 12–18% of women of reproductive age who were unmarried or had no children had received at least one TT immunization. Table 2 shows the results of bivariate and multivariate analyses of various predictor variables on access to TT immunizations.
### Table 2: Relationship between family background, household, and programme variables and TT1 coverage rates of all women of reproductive age

<table>
<thead>
<tr>
<th>Characteristic/variable</th>
<th>Relationship with TT1 immunization coverage</th>
<th>Bivariate analysis</th>
<th>Logistic regression analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Family background</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woman's birthplace</td>
<td>Women born in urban slums had a lower access rate than women born in urban non-slum areas or in rural areas</td>
<td>0.58 (0.52–0.65)*</td>
<td>NS*</td>
</tr>
<tr>
<td>Woman's age</td>
<td>Women aged &lt;20 years had a lower access rate than women aged 20–29 years</td>
<td>0.17 (0.15–0.20)</td>
<td>0.49 (0.41–0.59)</td>
</tr>
<tr>
<td></td>
<td>Women aged ≥30 years had a lower access rate than women aged 20–29 years</td>
<td>0.41 (0.36–0.46)</td>
<td>0.27 (0.23–0.31)</td>
</tr>
<tr>
<td>No. of children living in the family</td>
<td>Women who had no children had a lower access rate than women with 1–2 children</td>
<td>0.12c (0.09–0.14)</td>
<td>0.10 (0.8–0.13)</td>
</tr>
<tr>
<td></td>
<td>Women with ≥3 children had a lower access rate than women with 1–2 children</td>
<td>0.34c (0.29–0.39)</td>
<td>0.77 (0.66–0.91)</td>
</tr>
<tr>
<td>Woman's educational level</td>
<td>Women with no formal education had a lower access rate than women with 1–5 years of education</td>
<td>0.81 (0.71–0.92)</td>
<td>0.71 (0.61–0.82)</td>
</tr>
<tr>
<td></td>
<td>Women with ≥6 years of education had a lower access rate in the bivariate analysis and a higher access rate in the multivariate model than women with 1–5 years of education</td>
<td>0.74 (0.65–0.84)</td>
<td>NS</td>
</tr>
<tr>
<td>Length of time woman had been living in Dhaka</td>
<td>Women living in Dhaka for &lt;5 years had a lower access rate than women living in Dhaka for 5–14 years</td>
<td>0.78 (0.68–0.89)</td>
<td>NS</td>
</tr>
<tr>
<td></td>
<td>Women living in Dhaka for ≥15 years had a lower access rate than women living in Dhaka for 5–14 years</td>
<td>0.70 (0.62–0.79)</td>
<td>NS</td>
</tr>
<tr>
<td>Woman's marital status</td>
<td>Women who were separated, divorced or widowed had a lower access rate than women who were currently married</td>
<td>0.32 (0.27–0.39)</td>
<td>0.65 (0.53–0.80)</td>
</tr>
<tr>
<td></td>
<td>Women who had never been married had a lower access rate than women who were currently married</td>
<td>0.06 (0.05–0.08)</td>
<td>0.07 (0.06–0.08)</td>
</tr>
<tr>
<td>Woman's employment status</td>
<td>Women who worked for money had a lower access rate in the bivariate analysis but in the multivariate analysis a higher access rate than women who did not work for money</td>
<td>0.70 (0.62–0.79)</td>
<td>NS</td>
</tr>
<tr>
<td>Husband's occupation</td>
<td>Women whose husbands were unemployed or who had a manual unskilled occupation had lower access than women whose husbands had a manual skilled or a nonmanual occupation</td>
<td>0.61 (0.52–0.70)</td>
<td>Not included in model</td>
</tr>
<tr>
<td><strong>Household</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average reported monthly income</td>
<td>Women living in households with a monthly income ≥Tk 7500 (≥US$ 188) had a lower access rate than women living in households with lower monthly income</td>
<td>0.66 (0.59–0.74)</td>
<td>Not included in model</td>
</tr>
<tr>
<td>Slum/non-slum status</td>
<td>Women living in non-slum households had a lower access rate than women living in slum households</td>
<td>0.72 (0.65–0.80)</td>
<td>NS</td>
</tr>
<tr>
<td><strong>Programme</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distance to nearest EPI centre</td>
<td>NA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Home visitation by field workers</td>
<td>Women who reported 0–1 contacts with field workers during the previous year had a lower access rate than women who reported ≥2 contacts</td>
<td>0.43 (0.38–0.49)</td>
<td>0.42 (0.37–0.48)</td>
</tr>
</tbody>
</table>

* Figures in parentheses are 95% confidence intervals.

b NS = not statistically significant.

c Bivariate analysis limited to currently married women only.
among all women of reproductive age (access is defined as the percentage of women obtaining at least one TT immunization (TT1)). A variety of sociodemographic and programme variables were associated with TT access, but the effects of socioeconomic status per se were less prominent than for maternal TT2 coverage. Interestingly, women living in non-slum households and in households with incomes of >Tk 7500 (>US$ 188) per month had lower access rates than other women.

In the bivariate analysis, TT1 coverage rates were lower for the following groups: women born in urban slums; women aged <20 years or ≥30 years; women with two or more children; women with no formal education and also women with ≥6 years of education; women living in Dhaka for <5 years or ≥15 years; women who were unmarried or currently separated, divorced, or widowed; women who worked for money; women whose husbands were unemployed or who had manual unskilled occupations; women living in households with incomes <Tk 7500 (<US$ 188) per month; and women who reported less than two contacts with family planning field workers during the previous year.

The effect of home visitation by family planning field workers on access to TT immunization was not quite as strong in the multivariate analysis as in the bivariate analysis, but the multivariate effect was still nevertheless associated with a reduction in the odds of TT1 coverage of more than one-third.

The following variables were significantly related to TT1 coverage in the bivariate analysis but not in the multivariate analysis: woman's birthplace, woman's educational level, length of time living in Dhaka, woman's employment status, and slum/non-slum household status. Analysis of these differences between the results of the bivariate and multivariate analyses (data not shown) indicates that women born in less impoverished environments (i.e., non-slum urban locations) were more likely to be unmarried than were women born in urban slum or rural locations. Thus, after controlling for marital status, the effect of birthplace became insignificant.

The effect of length of time living in Dhaka on TT1 coverage is mediated in part by the woman's age. Women who had lived in Dhaka for <5 years are younger than women who had done so for 5–14 years. Thus, after controlling for the effect of age, the effect of living in Dhaka for <5 years became insignificant. Comparison of women who had lived in Dhaka for ≥15 years with those living in Dhaka for 5–14 years indicated that the former were more likely to have been born in an urban non-slum location and were also more likely to be unmarried. Therefore, after controlling for the effect of marital status, the differences in access disappeared between women living in Dhaka for 5–14 years and those living there for ≥15 years.

The effect of women's employment status on TT1 coverage, which was observed in the bivariate analysis, became nonsignificant in the multivariate analysis because women who worked were more likely to be older and less well educated. In the bivariate analysis the TT1 coverage rate was lower in non-slum households because women of reproductive age living in such households were more likely to have never been married than were women living in slum households. A total of 31% of women of reproductive age who lived in non-slum households had never been married, compared with only 12% of those living in slum households. Since married women were far more likely to have received at least one TT immunization, controlling for marital status eliminated the relationship between slum/non-slum household status and TT access.

Four two-way interactions were identified as having a significant influence on access. However, the net effect of these interactions was small and their interpretation was not straightforward.

Discussion

To the best of our knowledge, the current study is the first to assess the various influences on TT immunization status among all women of reproductive age in a major urban area of Bangladesh. The coverage for two TT immunizations among women with a child under 1 year of age was quite impressive (85%). However, only half of the women of reproductive age had obtained at least one TT immunization, and only 1 in 10 had completed the entire series of five doses.

Characteristics of women needing additional immunizations

Maternal TT2 coverage was quite high in both slum and non-slum households (80% and 94%, resp.), and the gap in slum/non-slum maternal TT2 coverage appears to be narrowing substantially: in 1990, the percentage point difference between slum and non-slum coverage for Dhaka City as a whole was 26%, while according to our study in Zone 3 it was 14% in 1995.

* Two studies have previously analysed factors affecting TT immunization among recently pregnant women: one for a national sample of women (4); and the other for a sample of women living in a smaller municipal area of the country (15).
The recent decision of Bangladesh’s Expanded Programme on Immunization to change its previous policy of promoting two TT immunizations in the first pregnancy followed by an additional immunization during each subsequent pregnancy to one of promoting lifelong immunity through a total of five TT immunizations among all women of reproductive age is only now beginning to be implemented. Currently, women aged 15–19 years, never-married women, and women with no children are those who have the lowest rates of access to TT immunization: all of these subgroups have access rates that are ≤28% and each of these characteristics is a strong independent predictor of access in the multivariate analysis.

Immunoisation centre location and contact with family-planning field workers

Distance of the household from the nearest immunization centre and contact with family-planning field workers were both significant predictors of TT immunization status. In Zone 3, even though the average distance to an immunization centre was only 0.24 km and the longest distance to an immunization centre only 0.63 km, maternal TT2 coverage fell gradually with increasing distance from the immunization centre, even at distances of less than 0.40 km. Contact with field workers was also a significant predictor for maternal TT immunization coverage in both the bivariate and multivariate models. A demarcation was observed for women with two or more visits compared with those with zero or one visit. Furthermore, both distance to the nearest immunization centre and contact of mothers with family-planning field workers had a significant influence on childhood immunization coverage (14).

Our study provides evidence that the effect on maternal TT2 immunization coverage of visits by family-planning field workers was particularly strong among women with no formal education. Bhuyia et al. (16) obtained similar findings with respect to childhood immunizations in rural Bangladesh: field worker contact had its greatest impact on improving access to child immunization among mothers with no formal education. Thus, promotion of immunizations by field-workers during home visits to uneducated women could be one way of maintaining and improving coverage levels until the overall educational level of women improves. In addition to mitigating the negative effects of low education on maternal TT2 coverage, our findings suggest that visits by family-planning field workers also reduce the negative effects on coverage of greater distance from the nearest immunization centre.

Strategies to improve TT coverage

A strategy to improve access to TT immunizations among women of reproductive age needs to be widely applied throughout the study population and focused on young unmarried women or those who have not yet become pregnant. The most common reasons given by younger women in Zone 3 who had been pregnant for never having obtained a TT immunization were lack of information about the importance of such immunizations and fear of being immunized during pregnancy (11). Currently in Zone 3, as was also the case in rural Bangladesh in the early 1980s (17), there is reluctance to accept immunization during pregnancy because of fear of harm to the fetus. A widespread promotional campaign to increase the awareness among adolescent girls and young women of reproductive age of the need to begin their series of five TT immunizations as early as possible during their reproductive life would diminish the need for immunization during pregnancy.

Two additional promising strategies for improving TT coverage are reducing the number of missed opportunities for immunization promotion and conducting home visits to identify those in need of immunization (18). In Zone 3 the current rate of missed opportunities for TT immunization promotion is 88% (12). Improving each woman’s understanding about the need for additional doses is a key strategy for improving TT coverage (19, 20). At all interactions between health workers and women of reproductive age, the women’s immunization status should be checked and those who need to be immunized should be referred.

Coverage could also be increased if health workers promoted immunizations when they visit the homes of women of reproductive age and subsequently used targeted follow-up of these women. Observations suggest that field-worker – client interactions could become even more effective following additional training and supervision (12). Coverage could also be improved by making immunization sites more “user-friendly,” increasing knowledge about the schedule and purpose of TT immunizations among clients and providers, and increasing the prevalence of client-retained TT immunization cards (12). Finally, for the small percentage of the population that does not respond to such efforts, particularly when geographical clusters of neonatal tetanus cases have been detected through surveillance, immunization at temporary vaccination sites or even at home can serve as a temporary measure until coverage levels can be improved through more traditional approaches (21).
Conclusions

In urban Bangladesh, enormous challenges remain to expand TT coverage from two to five doses for all women of reproductive age as opposed to only women who are currently pregnant. The effort required to meet these challenges is justified, however, in view of the current importance of neonatal tetanus as a cause of child mortality in urban Bangladesh and the fact that TT immunization of mothers and mothers-to-be is one of the most highly cost-effective means of reducing infant mortality in developing countries (22). The findings of our study are likely to be relevant for urban areas in other countries that are also in the process of expanding coverage to five TT doses for all women of reproductive age.

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Résumé

La couverture vaccinale par l'anatoxine tétanique chez les femmes de la zone 3 de la ville de Dhaka: comment atteindre la totalité de la population féminine en âge de procréer dans les villes du Bangladesh

Au Bangladesh, le tétanos néonatal pose encore un important problème de santé publique, avec environ 41 000 décès chaque année. Les données actuelles montrent que le problème est aussi sérieux en ville qu’en milieu rural car en milieu urbain la couverture vaccinale est encore faible chez les femmes en âge de procréer, les accouchements à domicile sont courants et l’hygiène ménagère demeure médiocre.

L’article constitue une analyse de la couverture vaccinale par l’anatoxine tétanique chez les femmes en âge de procréer qui résident dans la zone 3 de la ville de Dhaka. Cette analyse se fonde sur des données obtenues en 1995 par le Centre international de recherche sur les maladies diarrhéiques (Bangladesh) dans le cadre d’un projet de santé maternelle et infantile intitulé MCH-FP Extension Project (Urban). Il ressort de ces données que 11% seulement des femmes en âge de procréer avaient reçu la série complète de cinq vaccinations antitétaniques et que seulement 52% d’entre elles en avaient reçu au moins une. La couverture maternelle par deux vaccinations (c’est-à-dire le pourcentage de mères d’enfants de moins de 1 an ayant subi deux vaccinations) est de 85% et la différence de couverture entre les femmes des bidonvilles et les autres est apparemment en diminution.

Parmi les facteurs qui influent le plus sur la situation des femmes en matière de vaccination antitétanique, figurent le niveau d’instruction, la distance à parcourir jusqu’au centre de vaccination le plus proche et les contacts avec les agents de la planification familiale. D’autres facteurs ont également une influence, notamment l’âge, l’état civil, l’emploi, le temps écoulé depuis le départ de la campagne pour la ville et le nombre d’enfants. Les relations sont complexes et elles varient en fonction du nombre de vaccinations subies (une ou deux) ou du type d’analyse (à deux ou plusieurs variables).

Les résultats font ressortir la nécessité d’organiser une campagne de grande envergure dans la ville de Dhaka pour inciter les jeunes femmes à se faire vacciner contre le tétanos et à recevoir leur cinq doses d’anatoxine. Ils montrent également qu’il faut faire un effort de promotion du vaccin auprès des habitants des bidonvilles et améliorer les services destinés à cette population. Le taux de couverture vaccinale est à peine plus faible chez les femmes des bidonvilles, mais du fait de leur plus forte probabilité de grossesse, elles ont davantage de chances de donner naissance à un enfant exposé au risque de tétanos néonatal. Par ailleurs, le bidonville constitue un environnement plus favorable au tétanos néonatal chez les nouveau-nés non protégés. On peut améliorer la couverture vaccinale dans les bidonvilles par des mesures novatrices visant à accroître la demande et à faciliter l’accès aux services de vaccination. Dans la zone étudiée, 84% des mères d’enfants en bas âge qui n’avaient pas reçu au moins deux doses d’anatoxine habituaient des bidonvilles. Dans tous les groupes socio-économiques, on a constaté que l’accès à la vaccination antitétanique (au moins une dose de vaccin) était médiocre; l’action en faveur d’un meilleur accès à cette vaccination ne doit donc pas se limiter à la population des bidonvilles.

Les auteurs évoquent deux autres stratégies en vue d’améliorer la couverture vaccinale chez les femmes en âge de procréer: a) s’efforcer de manquer moins d’occasions de vanter les mérites de la vaccination lors de rencontres entre patientes et agents de santé; b) recenser par des visites à domicile toutes les femmes qui sont encore à vacciner.
Tetanus toxoid immunization coverage among women in Dhaka City

References