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### METHODOLOGY OF SURVEYS

Most of the countries represented at the meeting had organized special surveys to collect reliable data on neonatal tetanus, since routine reporting greatly underestimates the expected true incidence.

The participants discussed at length the methods used for organizing the surveys and various difficulties encountered. By pooling the experience of those participating at the meeting, common guidelines for future surveys could be formulated. These guidelines would also help to assure comparability of data. To focus the discussion, the survey guidelines used in India were examined.

#### AREA:

The area to be covered by a survey depends on the objective of the country as well as on financial and other administrative resources available. If it is possible to organize two or more surveys, the country can be stratified by different ecological area where different incidence rates of neonatal tetanus can be expected. If the neonatal tetanus problem is to be compared in different ecological areas, then it is best that each survey use a sufficiently large sample size to ensure statistically valid results. It may be preferable in some countries to conduct the survey in ecological areas where the incidence may be expected to be particularly high, so that the national authorities may be alerted to the magnitude of the problem.

The 30 cluster sampling technique may be used for sampling in each universe.

#### SAMPLE SIZE:

Where present incidence rates are high, as in most developing countries in EMRO and SEARO, a sample size of 2,000

live births is believed to be adequate. A larger sample size may be necessary where expected incidence is low and 95% confidence required.

#### PERIOD OF RECALL:

The period of recall used in some surveys was three months and in others one year. A three-month recall period would probably increase the accuracy of the data collected, as well as permitting the collection of more detailed information. However, more staff time would be necessary to conduct the survey, since four times as many homes would need to be visited. Regardless of the recall period to be used, well-known festivals and holidays must be identified to serve as calendar reference points so that vital events can be precisely placed in time.

#### QUESTIONNAIRE:

The two forms used in the Indian survey were adopted. Form I (attached) would be used by the surveyors on house-to-house visits. The participants agreed on the desirability of including columns for collecting information on the tetanus toxoid vaccination history of the mothers, the place of delivery and the category of person delivering the child. This information would need to be collected on all live birth enumerated. In this way, risk factors such as mothers' immunization status and the delivery practices could be correlated with neonatal outcome. Other factors influencing the occurrence of neonatal tetanus also could be included, such as, whether and at what age the child had been circumcised. It was agreed that additional questions of local importance could also be included on Form I. The questionnaire should however be kept as brief as possible and should be pre-tested in the field.

#### DEFINITION OF CASES:

The accuracy of diagnosis of neonatal tetanus is critical. In all the surveys conducted thus far, difficulties in the retrospective diagnosis of neonatal tetanus were

experienced. The ability and clarity with which the parent recalled the symptoms during the neonate's illness and the parents' willingness to discuss this with the surveyors were reported to have varied considerably from country to country.

The criteria used for definition of a case must be standardized and made explicit. Furthermore, any definition would need to be operationalized in the form of questions which the respondent will readily understand. The specificity and reliability of cessation of sucking as a sign of neonatal tetanus was brought into question. However, since this is the most common presenting symptom of neonatal tetanus, it was agreed that questions relating to sucking ought to be retained on the investigation form.

A case of neonatal tetanus was defined as a child from 1-28 days old who was able to suck at birth who subsequently ceased to feed and exhibited the following: trismus and generalized spasms ("convulsions") with or without loss of consciousness. Supporting signs and symptoms may include fever and apparent infection of the umbilical stump.

It was decided that the questions included on form 1 (attached) would be retained, but additional questions may need to be asked by the investigating medical officer at his discretion. In case of difficulty, a second opinion should be sought.

#### STAFF:

It was generally felt that the composition of survey teams would depend on the local conditions and availability of health workers. In some countries, it may be preferable to use only female surveyors, who may be better able to establish rapport with female respondents. In other countries, a mixed male and female worker in each team may be desirable. It was emphasized that all health workers be thoroughly briefed and trained beforehand.

Since retrospective diagnosis is difficult and critical for the survey, all neonatal deaths should be investigated by a medical officer.

SUPERVISION:

Close field supervision and spot-checks are essential and must be an integral part of the survey.

ANALYSIS:

Neonatal tetanus surveys are important not only to determine baseline incidence, but also to identify high risk groups and risk factors so that appropriate control strategies may be formulated. It was agreed that the survey should be so designed as to permit an analysis by sex. In the process, hypothesis can be generated. For example, is one sex differentially missed by such surveys, or is one sex differentially at risk? The prior immunization status of the mother, where and under whose supervision the delivery occurred, and the date of the child's death or other data to be analyzed. Other questions, such as the mother's level of education, can also be asked.

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