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PROCEEDINGS OF THE WORKSHOP FOR ACCELERATED CONTROL OF NEONATAL TETANUS

Harare, Zimbabwe

July 18 - 25, 1988

REACH

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Proceedings of the Workshop for Accelerated Control of Neonatal Tetanus

WHO/U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT

Harare, Zimbabwe

18 - 25 July 1988

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ACRONYMS

AFRO	WHO Regional Office for Africa
ANC	Ante-natal Care
BCG	Bacille Calmette-Guerin Vaccine
CCCD	Combatting Childhood Communicable Diseases
CDC	Centers for Disease Control
CSD	Communications Support Division
DPT	Diphtheria/Pertussis/Tetanus
EPI	Expanded Program on Immunization
FGR	Focus Group Research
FP	Family Planning
GAG	Global Advisory Group
IEC	Information, Education, Communication
KAP	Knowledge, Attitude and Practice
MCH	Maternal and Child Health
MOH	Ministry of Health
NGO	Non-governmental Organization
NNT	Neonatal Tetanus
OPD	Outpatient Department
OPV	Oral Polio Vaccine
REACH	Resources for Child Health
SCF	Save the Children Fund
SRHDO	Sub-regional Health Development Office (WHO)
TBA	Traditional Birth Attendant
TT	Tetanus Toxoid
UCI	Universal Childhood Immunization
WHO	World Health Organization

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I. INTRODUCTION

Although neonatal tetanus (NNT) is the second leading cause of child death among the six EPI target diseases and kills an estimated 210,000 infants annually in Africa alone, its control has been neglected relative to the other vaccine-preventable diseases and given the availability of a safe, efficacious and inexpensive heat-stable vaccine.

The Global Advisory Group (GAG) of the Expanded Program on Immunization in November 1987 recommended that countries take urgent steps to improve coverage with tetanus toxoid immunization and accept the challenge of eliminating NNT by launching special initiatives. Specific recommendations were made to:

- revise national immunization plans, assessing the magnitude of the problem and selecting/implementing innovative immunization strategies,

- widen the target group for tetanus toxoid immunization to include all women of childbearing age, with special emphasis on pregnant women (regardless of the month of pregnancy),

- adopt the 5 dose TT immunization schedule which confers protection against NNT throughout the childbearing years,

- identify and implement innovative immunization strategies to reach women at risk,

- improve monitoring and surveillance of the progress achieved for the control of NNT,

- monitor TT immunization coverage by routinely reporting TT doses administered by dose and target group and by including in coverage surveys TT immunization status of the mothers having a child aged between 0 and 11 months, and

- undertake studies to document the magnitude and the significance of missed opportunities for immunization both for children and for women of childbearing age.

A series of NNT control workshops was first conceptualized and proposed in 1987 by the WHO Regional Office for Africa (AFRO) in Brazzaville. It was hoped that these workshops would provide guidance to countries in the Region as they prepared to accelerate NNT control activities. A total of five workshops (two English speaking, two French speaking, and one Portuguese speaking) were proposed for 1988 and 1989.

Planning for the workshop technical sessions and administrative arrangements was done jointly by WHO/AFRO and REACH, with further assistance from WHO/EPI in Geneva.

II. PROCESS

The WHO/U.S. Agency for International Development (REACH) Workshop for Accelerated Control of Neonatal Tetanus was conducted in Harare, Zimbabwe from 18-25 July 1988. Each of nine English-speaking countries

(Ethiopia, The Gambia, Ghana, Liberia, Nigeria, Sierra Leone, Tanzania, Zambia, and Zimbabwe) was invited by AFRO on behalf of AFRO/REACH to send three national participants--the national EPI manager, senior MCH staff, and an epidemiologist. Additionally, a representative of an external agency actively or potentially involved in NNT control activities in each country was invited to participate at the workshop.

Facilitators/resource persons and administrative staff met in a 4-day pre-workshop meeting to discuss objectives, roles, processes, and technical issues and administrative mechanisms.

The agenda of the workshop appears in Annex 1. Methodologies were taught for NNT surveillance, monitoring, and special studies, using case studies whenever possible. Detailed action plans (including designing surveys, monitoring forms, etc.) were elaborated in country-specific working groups covering all aspects of NNT control. After the country participants had prepared their action plans for accelerated neonatal tetanus control, the last session was devoted to planning for implementation of the plan, with target dates and responsible persons designated.

The overall workshop objectives appear in Annex 2. Objectives for each of the sessions appear in Annex 3. A list of participants, organizations, resource persons/facilitators, and administrative staff is given in Annex 4. Background materials by each session are listed in Annex 5.

Each participant was given a file consisting of these background materials. All hand-outs, country reports, and action plans prepared during the workshop were distributed and filed in a second file given to each participant.

Matrices were used to guide the working groups in each session to assess the situation, identify problems and their solutions, and prepare a detailed action plan (by objective, activity, inputs, responsibility, schedule, and output indicators). These appear in Annex 6. Specific tasks were prepared for each working group.

The opening of the workshop was held in plenary session at 09:10 on 18 July 1988.

The representative of the Ministry of Health, Dr. B. Sikipa, Principal Medical Director for Health Services, welcomed everyone on behalf of Zimbabwe and the Ministry of Health. Ms. L. Taylor of the United States Agency for International Development spoke on behalf of the agency and welcomed all persons attending the workshop. The representative for REACH (Resources for Child Health) and Co-coordinator of the workshop, Mr. R. Steinglass, spoke on the support being given to accelerated control of neonatal tetanus in Africa.

The workshop was officially opened by Dr. U. Shehu, Director of the WHO Subregional Health Development III Office (SRHDO), on behalf of the WHO Regional Director for Africa, Dr. G. Monekosso. He stressed the importance of the neonatal tetanus problem, the fact that the technology for its control had been around for many years, and the obvious need to accelerate the activities for the control of this vaccine preventable disease.

Dr. B. Dando, Co-coordinator of the workshop, presided over the appointment of session chairmen and rapporteurs, with each of the countries taking turns in this capacity. (Annex 7). The overall rapporteur was Marti Pennay from REACH. Facilitators/resource persons assigned to each country working group are also listed in Annex 7.

The workshop came to a close at noon on 25 July with a vote of thanks by Dr. Antwi, remarks by Dr. Dando and Mr. Steinglass, and an official statement by Ms. Serima of the Zimbabwe Ministry of Health.

III. SITUATION ANALYSIS: NNT IN AFRICA

A. Neonatal Tetanus in Africa (by Dr. F. Gasse, WHO, Geneva)

In 1988 neonatal tetanus remains, after measles, the second leading killer of children in Africa among EPI diseases. It is estimated that 200,000 newborns still die each year from NNT in the African Region. As of July 1988, twelve countries (26%) had carried out a NNT mortality survey. NNT rates ranged from 4 to 18 per 1000 livebirths. For the majority of Africa, high risk areas and high risk groups have not yet been identified.

Although an increasing number of countries (38% in 1987) now report cases, many still do not. Only 1684 cases were reported in 1986 (i.e., 0.8% of cases). In spite of progress between 1985 and 1987 (+10% incremental increase), coverage of pregnant women with at least 2 doses of tetanus is low (22% in 1987) and lags well behind the BCG (47%) and DPT3/OPV3 (35%) coverage of children. Dropout rates between the first and second doses of TT (64%) remain an important problem.

In 60% of all countries, only pregnant women attending antenatal services are immunized. In 51% a school immunization program exists. In recent acceleration efforts, only 4 of 16 countries which carried out immunization days or weeks included TT immunization of childbearing age women. Sixty-eight percent of countries are currently reporting doses of TT administered to pregnant women and 79% are giving TT records to mothers. Unfortunately, these records are rarely retained by mothers. Between 1986 and 1987, tetanus immunization status of mothers was included in 50% of the coverage surveys carried out. As of July 1988, four missed opportunity surveys and two case investigation surveys have been carried out in the African Region.

B. Prevention of NNT by Means Other than Immunization (by Dr. S. Kimemiah, WHO/SRHDO III)

The objective of this paper is to show that the training of traditional birth attendants (TBAs) will contribute to a reduction of NNT incidence and infant mortality rates.

Neonatal tetanus is one of the leading preventable causes of infant death throughout the world in developing countries. Nearly 1,000,000 children die yearly in the whole world. In Africa alone,

nearly 150,000-300,000 die annually from this disease. The disease can be reduced to the minimum and, in fact, even be eliminated. (It is virtually eliminated in countries of Western Europe and North America).

Nearly two thirds of births in developing countries are attended by TBAs. It is widely believed that their practices are a common cause of contamination. This occurs commonly through the umbilical cord, particularly when the cord is cut with unsterile instruments, e.g., knives, razor blades, etc. Thus the training of TBAs in aseptic techniques at delivery and during the postnatal period will help reduce the incidence of neonatal tetanus and reduce the neonatal mortality rate. In countries where there are many TBAs, there is a very strong case for training TBAs. These TBAs can also help in promoting immunizations in collaboration with health staff. To remain active after training, TBAs require adequate supervision.

C. Country Presentations on NNT (by each national team)

Reports on the NNT situation were presented by each country according to a presentation format which had been sent in advance of the workshop to each country delegation. (Annex 8). Table 1 provides a summary of those presentations.

1. Magnitude of NNT

The magnitude of the NNT problem has been assessed in four countries (Ethiopia, The Gambia, Zambia, and Zimbabwe) from mortality surveys. The rates range from 4 to 11 per 1000 live births. However, only 585 cases of NNT were reported from five countries in 1987. The number of cases is unknown for 1987 in four countries. The impact of control activities on NNT reduction has been demonstrated in Harare Hospital in Zimbabwe and in Tanzania and Sierra Leone.

2. TT Coverage

From routine reporting of doses of TT administered to pregnant women, TT2 coverage remains low in most countries and ranges from 7% to 54%. TT2 coverage achieved in other target groups is not assessed.

From results of cluster coverage surveys, TT2 coverage ranges from 9% to 85% and drop out rates remain an important problem in most of the countries (from 28% to 43%).

3. Control Strategies

The most widely used target group for TT immunization (all countries) is pregnant women. However, four countries are also targeting other childbearing aged women and three are targeting children 2-14 years old.

The WHO-recommended 5-dose TT immunization schedule is adopted by four countries. All countries immunize pregnant women through ANC visits, but only four also offer TT immunization at

TABLE 1: SUMMARY OF COUNTRY PRESENTATIONS (current situation)

	ETH	GAM	GHA	LIB	NIG	SIE	TAN	ZAM	ZIM
MAGNITUDE OF NNT									
-NNT mortality rate from survey (year)	4.5 (83)	11 (80)	-	-	-	-	-	4.3 (86)	4 (83)
-Reported NNT cases (87)	107	17	-	-	-	120	274	-	67
TT COVERAGE									
-From routine reporting (87) (%)	7.2	-	14.8	20	16	-	54	14	48
-From cluster survey (year)	9-53 (84)	85 (87)	42 (84)	20 (88)	30-90	59 (88)	58 (86)	41 (87)	-
-Drop-out rate	34.4	-	41.5	43	29	-	31	35	27.6
-TT card in use (% retained)	-	-	+	+	-	+ (35)	+ (25)	-	+
-Children's DTP3/OPV3 coverage (%)	16	77	37	28	21	30	81	66	77
IMMUNIZATION STRATEGIES									
-Target Group:									
pregnant women	+	+	+	+	+	+	+	+	+
childbearing age women	+	-	+	+	-	+	-	-	-
children (2-14 yrs)	-	-	+/-	-	+/-	+	-	-	-
-WHO TT immunization schedule	+	+	+	+	-	-	-	-	-
-Approaches:									
ANC visits	+	+	+	+	+	+	+	+	+
at child immunization clinics	+	+	-	-	-	+	+	-	-
all contacts (preventive/curative)	-	+	-	-	-	+	-	-	-
mass campaign*									
schools	-	-	+/-	+/-	-	+/-	-	-	-
markets	-	-	-	+/-	-	-	-	-	-
SAFE DELIVERY PRACTICES									
-trained TBA (%)	-	-	-	25	-	-	-	56	-
-antenatal care:									
1 or more visits (%)	18	95	64	30	60	30-80	97	90	89
2 or more visits (%)	-	80	24	-	-	5-50	-	-	60
-home deliveries (%)	94	80	80	75	60	70	45	57	40

TABLE 1 (cont'd): SUMMARY OF COUNTRY PRESENTATIONS (current situation)

	ETH	GAM	GHA	LIB	NIG	SIE	TAN	ZAM	ZIM
SURVEILLANCE									
-separate NNT reporting	+	+	-	-	-	+	-	-	+
-sentinel system	-	-	-	-	-	+	+	-	-
-standard case definition	-	-	-	-	-	-	-	-	-
-case investigation	-	-	-	-	-	-	-	-	-
MONITORING									
-routine reporting of* doses by:									
--TT1, TT2									
--TT1, TT2, TT Booster									
--target group									
-coverage surveys for TT:	+	+	+	+	+	+	+	+	+
mothers of 0-11 month olds	-	-	-	-	-	+	-	-	-
mothers of 12-23 month olds	-	+	+	-	-	-	+	-	-
childbearing age women	-	-	-	+	-	+	-	-	-
count only doses received in last pregnancy	+	+	+	+	+	+	+	+	+
-missed opportunity survey	-	-	-	-	-	-	-	-	+
COMMUNICATION STRATEGIES									
include specific information on TT	-	-	-	-	-	-	-	-	+

*data being verified

child immunization clinics. Two countries take advantage of all contacts with women to screen and immunize them, if needed. Recently, campaigns nationwide or in limited areas were carried out in several countries. Schools and markets are currently covered by 3 and 1 country, respectively.

4. Safe Delivery Practices

All countries are trying to improve the quality of ANC services and to increase access. They are also involved in improving delivery practices by training TBAs. Data on percent of TBAs trained are unavailable in most countries. From 18% to 95% of pregnant women attend a clinic for ANC at least once. From 40% to 94% of deliveries are estimated to occur at home.

5. Surveillance

Four countries report NNT cases separately, although in two of them NNT is not separated from tetanus during the first year of life. Two countries are using sentinel surveillance systems to report cases. NNT case investigations are not carried out and standard case definitions are not used.

6. Monitoring

The methodology used to monitor TT2 coverage through the routine reporting system varies from country to country. Most countries report TT1 and TT2; or TT1, TT2 and Boosters. No countries report on TT3, TT4 and TT5.

All countries include questions on TT during the 30-cluster surveys. The methodology is not uniform, however, with some countries counting TT received by mothers during pregnancy with the index children 0-11 months old or 12-23 months old. Other countries question women of childbearing age as opposed to mothers. Countries do not inquire as to the TT ever received, but instead limit their questions to TT received during the last pregnancy only. Only one country has performed a missed immunization opportunity survey.

7. Communication Strategies

The country reports reflect the fact that most countries are emphasizing only childhood immunizations and that specific information on NNT and TT immunization are almost never included in posters, TV spots, etc.

IV. ASSESSMENT OF THE MAGNITUDE OF NNT AT COUNTRY LEVEL

A. Identification and Summary of Problems

Working in country groups, each team reviewed their available data on the magnitude of NNT. Each team identified the major problems with the current data in their respective countries. (See Table 2).

Table 2: Major Problems Identified in the Assessment of the Magnitude of Neonatal Tetanus at Country Level -- by Country

	Zam	Gamb	Zim	Tan	Lib	SL	Nig	Total
- Lack of case definition	1							1
- Disease not notifiable	1							1
- Home deliveries not reported	1							1
- Inadequate resources	1							1
- Poor reporting		1	1	1				3
- Need for sentinel system		1			1		1	3
- Need for baseline mortality data		1			1	1	1	4
- Poor retention of ANC cards		1						1
- Inaccuracy of data			1		1			2
- High risk area not identified			1					1
- Need for case investigation (high risk group/risk factors)			1		1			2
- Poor regularity of reporting				1				1
- Need for adequate reporting forms			1		1			2
- No national policy on NNT reporting				1				1
- Sentinel system not working						1		1

A summary of the problems identified by seven countries is given below:

Problem	No. of countries
- Need for NNT survey (for awareness of baseline data)	4
- Need for: -establishing a sentinel system	4
-strengthening present sentinel system	1
- Poor reporting of cases	3
Quality (accuracy)	2
Regularity	1
- Need for adequate recording forms (design)	2
- Need for case investigations to identify high risk groups and risk factors	2
- Need for identification of high risk areas	1
- Lack of national policy on reporting NNT	2
- Home deliveries not reported	1
- Inadequate resources	1
- Inadequate supervision	1

B. Design and Execution of Neonatal Tetanus Mortality Surveys (by Dr. A. Galazka, WHO, Geneva)

Neonatal Tetanus (NNT) is still an important cause of avoidable mortality in developing countries. In the past, NNT was overlooked by the health services, but recently the extent and magnitude of NNT has become clearer due to special community-based NNT morality surveys. Such surveys have begun to yield a more realistic picture of NNT in developing countries. By providing information on traditional home deliveries and postpartum care, surveys are removing some of the guesswork surrounding neonatal mortality and the proportion attributable to NNT.

It is recommended that NNT mortality surveys should be undertaken in the next 12 months in those countries which have infant mortality rates equal to or greater than 50 per 1000 live births; those where over 50% of births are attended by an untrained person; and, in particular, those which have no reliable information other than that received by notification or recorded hospital cases.

The planning and execution of NNT mortality surveys were reviewed. The issues which are particularly important in the planning stage are: area and population to be surveyed, sampling technique, sample size, period of recall, definition of NNT case and proper forms and questionnaires. The need for careful training and supervision of the staff was emphasized.

The most frequent problem encountered during NNT mortality surveys is the inability to collect valid information on all neonatal deaths. This may be due to the poor performance of interviewers. Or it may be due to specific cultural and sociological beliefs and habits, resulting in an unwillingness to discuss neonatal deaths. The possible correction measures were discussed.

V. SURVEILLANCE OF NNT

A. How to Improve Surveillance of NNT through Routine and Sentinel Reporting Systems (by Dr. B.C. Dando, WHO/SRHDO III)

Neonatal tetanus is estimated to be the cause of at least 200,000 deaths in the WHO African region each year. However, only about 1% of these deaths are reported to the health services. The main reason for this extremely low level of reporting is that the majority of these deaths occur in rural areas and occur without recourse to health care.

How can surveillance be improved? There are a variety of methods available to us which include:

1. Routine reporting: Improvements in the quality and regularity of routine reporting will give us information on the small minority of cases which attend health facilities. A particular need is to develop community-based reporting using community health workers and traditional birth attendants.

2. Sentinel reporting: This uses specially selected sites chosen according to an agreed set of criteria. These sites can be hospitals and/or clinics. The scheme can be gradually enlarged and then be absorbed in the routine reporting system.

3. Local area monitoring: This system uses hospital based data. The system can be retrospective (from records and reports) and then prospective. Sites can be hospitals at all levels.

4. Neonatal tetanus surveys: covered elsewhere.

As we look toward accelerated control of neonatal tetanus, improved surveillance becomes ever more crucial for monitoring progress.

B. How to Carry Out NNT Case Investigations (by Dr. F. Gasse, WHO/Geneva)

Acceleration of efforts to increase TT2 coverage should be a top priority for the majority of African countries. However, NNT case investigations are useful in areas of high TT coverage or high NNT incidence to determine why cases occur and what action can be implemented to prevent future cases. The following information can be collected:

- general (name, address, sex, date of birth)
- immunization status of the mother
- place of delivery
- delivery attendant (doctor, nurse, TBA, other)

- technique used to cut the cord
- type of dressing
- outcome of the case
- prenatal care visits (where, number of visits)

Additional information can also be relevant:

- ethnic group
- religion
- years of residence at present location
- knowledge of the mother on TT and NNT prevention
- socioeconomic factors (literacy, etc.)

Any investigation of cases should be followed by implementation of the selected corrective measures. (A WHO questionnaire is included in document WHO/EPI/GEN/86.8.)

VI. MONITORING TT COVERAGE OF WOMEN BY ROUTINE REPORTING & CLUSTER SURVEYS

A. How to Assess TT Coverage Through Routine Reporting (by R. Steinglass, REACH, Washington)

The presentation reviewed methods of monitoring reported TT coverage in light of various target groups and immunization schedules. To monitor performance, TT immunizations should be recorded by dose (TT1, TT2, TT3, TT4 and TT5) and by target group (pregnant women, other women of childbearing age, and other).

Measuring and monitoring TT coverage using routine reports is not as easy as monitoring coverage in infants, a cohort which renews itself annually and is consequently easily calculated. Multiple doses of TT are administered with varying intervals over a 30-year reproductive span, and women continuously enter and leave the eligible age groups.

To calculate coverage achieved during a single year in areas immunizing pregnant women, the standard WHO formula is:

$$\text{Coverage of pregnant women (\%)} = \frac{\text{pregnant women receiving TT2 (plus TT3 or more)}}{\text{total number of pregnancies *}} \times 100$$

(*Total number of pregnancies is assumed to equal annual births.)

TT coverage in areas immunizing all women of childbearing age is presently calculated by the formula:

$$\frac{\text{pregnant and other women of childbearing age receiving TT2 (plus TT3 or more)}}{\text{total women of childbearing age.}}$$

By counting only a single year's TT2 immunizations, the present method of calculating TT coverage in women of childbearing age implies that women require TT2 or booster each and every year. The presenter

suggested that, since the duration of immunity from 2 doses of TT is 3 years, the number of TT2 immunization given during the past 3 years should be accumulated in the numerator. The following formula was proposed for consideration by WHO and by the participants:

$$\text{Coverage of women of childbearing age with TT2(\%)} = \frac{\text{Pregnant and other women of childbearing age receiving TT2 during past 3 years}}{\text{total women of childbearing age}} \times 100$$

The calculation gives a point prevalence of maternal protection versus a single year's period prevalence.

To stress the need for a third dose of TT as part of the primary series, drop-out rates should be calculated according to the formula

$$\frac{TT1 - TT3}{TT1} \times 100$$

as well as the standard formula

$$\frac{TT1 - TT2}{TT1} \times 100.$$

Recordkeeping poses a particular problem with TT. Antenatal or mothers' health cards are less useful for recording TT immunizations in those programs targeting women of childbearing age, since this target group includes women before the inception of any pregnancy or between pregnancies. Use of a child's growth chart or child's immunization card for recording maternal TT is not an option where women must be immunized before or during their first pregnancy. Also these cards are not retained for more than a few years. TT immunization cards with space for 5 doses of TT are needed.

B. How to Carry Out TT Coverage Surveys by Cluster Sampling Technique (by Dr. F. Gasse, WHO, Geneva)

Cluster coverage surveys should always combine evaluation of immunization status of children aged 12-23 months with evaluation of TT immunization of mothers of children aged 0-11 months.

The sample size is 210 mothers i.e., 30 clusters of 7 mothers.

In each household visited, interviewers have to identify children aged 0 - 11 months and record on a specific form the dates of all TT doses administered to their mother at any time before the delivery of that child.

TT vaccination should be recorded on a specific form by date if a TT record is available or by history. Extra information could be collected such as the number of antenatal care visits, the number of visits to a health facility during the last pregnancy, or the place of delivery.

This information could allow the identification of missed opportunities and evaluation of the percentage of home deliveries versus health facility deliveries.

Analysis of the data collected should determine if a child aged between 0 and 11 months was protected against neonatal tetanus at birth.

The first step is to determine the total number of effective doses of TT administered to the mother at any time before the delivery of that child.

The second step is to determine the period of protection of any newborn after the last valid dose administered.

Doses	Period of Protection
TT1	0
TT2	15 days after TT2 - 3 years
TT3	15 days after TT3 - 5 years
TT4	15 days after TT4 - 10 years
TT5	15 days after TT5 - lifelong

The third step is to determine if the child was born during that period of protection.

The three doses of DPT given during infancy are equivalent to two valid doses of TT (if registered on a record).

C. How to Ensure TT Records are Retained by Women (discussion)

It was emphasized that the mother needs to be informed about the importance of the TT and child health cards. Most programs do not teach mothers about the value of the card. It was even suggested that a small fee be charged for the card so that mothers will value the card and therefore keep it. It was suggested that the card be made of durable paper, contain important symbols to make it attractive and be distributed in a polyethylene envelope.

VII. ALTERNATIVE IMMUNIZATION STRATEGIES TO INCREASE TT COVERAGE

A. Immune Response to Tetanus Toxoid (by Dr. A. Galazka, WHO, Geneva)

Basic information on the nature, potency, purity and stability of tetanus toxoid (TT) was presented.

The nature and mechanism of immunity against tetanus was discussed with special emphasis on the role of IgG antitoxins in the neutralization of tetanus toxin and on their capacity to pass easily through the placenta.

The understanding of various immunization schedules is facilitated by the knowledge about how primary, basic and booster immunization influence the level and duration of tetanus antitoxin. A special emphasis was put on the number of TT doses, intervals between TT doses and intervals between immunization and delivery. The immunological basis for innovative immunization strategies proposed by EPI was discussed. Some remarks were devoted to the possible immunization policy on women who have already been immunized in infancy or in childhood.

B. EPI Global Advisory Group (GAG) Recommendations - 1987 (by Dr. F. Gasse, WHO, Geneva)

The EPI Global Advisory Group met in 1987 in Washington, DC and urged countries to accept the challenge of eliminating neonatal tetanus, and endorsed the resolution of the 8th International Conference on Tetanus in Leningrad (1987). From this meeting the following recommendations were defined:

1. Expand the target group for tetanus toxoid to include all women of childbearing age (including pregnant women regardless of the month of pregnancy).

2. Immunize school children at school entry and school leaving if resources can be made available.

3. Select and implement innovative strategies to immunize women (too many opportunities are missed to immunize women) such as:

   - at child's immunization clinic
   - at antenatal visits
   - at contact with a health facility for whatever reason (curative care, pediatric clinic, OPD, family planning clinic)
   - as part of mass campaigns in areas which are not served through routine services

4. Adopt the TT immunization schedule for women:

Dose	When to give	Protection
TT1	. at first contact	. -----
TT2	. 4 wks after TT1	. 3 years
TT3	. 6-12 months after TT2 or during subsequent pregnancy	. 5 years
TT4	. at least 1 yr after TT3 or during subsequent pregnancy	. 10 years
TT5	. at least 1 yr after TT4 or during subsequent pregnancy	. throughout childbearing years

5. Record the TT immunization on a card kept by the mother.

6. Report neonatal tetanus cases separately.

7. Report routinely TT immunizations by target population by age group and by dose (TT1, TT2, TT3, and booster doses).

8. Always include evaluation of the TT immunization status of mothers in immunization coverage surveys for children.

9. Carry out investigations of cases of NNT to determine why cases occurred.

C. How to Carry Out Missed Opportunity Surveys for Immunizations of Children and Women (by Dr. B. Dando, WHO/SRHDO III)

With immunizations in many countries now routinely available in health facilities on a daily basis and through outreach services in clinic catchment areas, EPI has achieved a moderate level of coverage in many countries. However, a plateau appears to have been reached and it is becoming difficult to improve coverage further.

Studies have now been carried out in several countries which have shown that children and women visiting health facilities often leave without receiving immunizations which are due. Important opportunities to immunize are missed so coverage remains less than optimal.

How are such surveys carried out?

- These surveys can be carried out using regional or district staff; their cost is low. Children and women leaving a health facility (for preventive or curative care) have their health records examined to see which, if any, immunizations were due but not given. A brief questionnaire is administered. Lastly, clinic records are examined to see diagnoses for any person not immunized when this was due.

- A survey can be carried out at any level of hospital or clinic in a country.

- The survey aims to identify reasons why vaccines were not given when due. The results should be used by the EPI to improve services. This usually means ensuring that vaccines are made available with curative services, such as outpatient departments, emergency rooms, etc.

D. Cost Issues Related to Neonatal Tetanus Control Strategies (by Dr. R. Arnold and Ms. L. Brenzel, REACH, Washington)

It is important to determine how resource requirements change between alternative strategies. The future financing of a tetanus toxoid program can be better planned as a result of detailed cost information. Cost analysis identifies the quantity, type and value of all resources used. Because neonatal tetanus prevention through immunization is usually linked to routine EPI services, TT costs can be expressed as the additional or incremental costs of providing these

services. These incremental costs are of two categories: 1) variable costs, defined as those tied directly to the act of immunization; and 2) fixed costs, those which are required to maintain services delivery.

Cost-effectiveness analysis compares the total cost of a program with the outcomes produced by the program. Cost effectiveness analysis for tetanus toxoid immunization cannot be performed without a good measure of effectiveness. The cost effectiveness of two strategies can be compared. The strategy with the lowest cost-effectiveness ratio is the preferred strategy in economic terms.

An example based on a hypothetical Anglophone African country was used to compare costs of two tetanus toxoid delivery strategies: 1) all pregnant women attending static EPI clinics; and 2) all women of childbearing age attending static EPI clinics. In our example, the cost per TT2 completion was US $0.45 per pregnant woman and US $0.41 per woman of childbearing age. Therefore, immunizing all women of childbearing age is more cost-effective because we are immunizing more women for proportionally less resources. The assumptions made for the example may not be representative of particular individual country situations, so we hope each country will undertake its own cost-effectiveness analysis.

A costing handbook providing worksheets for calculating variable and fixed categories of resource requirements was provided to each participant. This handbook was used to explore country-specific TT strategies in the working sessions after the presentation.

VIII. SOCIAL MOBILIZATION AND COMMUNICATION STRATEGIES FOR NNT CONTROL

A. How to Assess Barriers to Coverage (by Dr. M. Alli, UNICEF, Harare)

An introduction was given on the magnitude of the NNT problem and why high TT coverage is needed in the first place. Some examples of non-communication barriers on the supply side which could aggravate the communication problems were highlighted. The need for advocacy at the highest level to convince governments and health workers to implement the new 5 dose TT immunization schedule was also discussed. Factors affecting compliance to the new TT schedule were reviewed. Possible strategies were then suggested for increasing compliance (e.g., showing the wife of a Head of State being given a TT injection on a poster could be used as a strong advocacy tool). Provision of adequate information was presented as an essential tool needed for advocacy at all levels if NNT eradication is to be achieved.

The communication barriers in relation to each strategy were discussed, as well as possible solutions for removing them. The communication barriers identified included the following: EPI usually seen as a program for children; lack of awareness of NNT as priority disease; TT only given at Infant Welfare clinics; and, TT delayed until after 4 months of pregnancy. The non-communication barriers identified included: 30-cluster surveys omit TT coverage; child health card does not have TT listed; absence of cards or insufficient supply; target group not well defined and strategy unclear; lack of

tracer system for detecting dropouts; missed opportunities at MCH, FP and OPD clinics as TT only given at Infant Welfare clinics; and, missed opportunity in the first trimester of pregnancy as TT delayed until after the fourth month of pregnancy.

B. Identification, Implementation and Evaluation of Communication Strategies to Increase Utilization of Services (by Dr. M. Alli, UNICEF, Harare)

A social mobilization analysis survey is needed at the national and community levels to determine what knowledge, attitudes and practices (KAP) must be taken into consideration in mobilizing communities. Communication channels need to be identified and used to increase the understanding that accelerating TT coverage requires active participation not only on the national level but on the individual level as well. The results of the Social Mobilization Analysis survey in Zimbabwe (UNICEF, May 1986, unpublished) were discussed, including the follow-up action taken. The UNICEF/WHO Universal Childhood Immunization (UCI) Training Package developed in July, 1987 was brought to the attention of the participants, especially Section 10. The document discusses the objectives and methodologies for KAP and FGR (Focus Group Research) surveys, including how to determine media habits and communication channels by various subgroups. Points of resistance (i.e., why people are not coming for immunization) should be identified to determine specific messages for correcting the gaps in knowledge.

Planning for demand creation is as essential as planning supply delivery. It is essential to coordinate the two for 100% coverage and sustainability. Apart from being a planning tool, FGRs and KAPs are also excellent evaluation tools which can be repeated periodically to assess changes in knowledge, attitudes, practices and beliefs. An example of a questionnaire designed to evaluate an EPI Awareness Week was discussed and country experiences from Zimbabwe, Nigeria and Liberia on how to conduct FGRs were shared.

An evaluation of the impact of social mobilization on coverage rates would involve the development of a mathematical model, such that the relative influence of other factors on coverage is defined. For the present, attempts should be made from the initial planning stage to incorporate an "intermediate output evaluation." For example, if one develops education posters on EPI or oral rehydration therapy, a period of pretesting is mandatory. And subsequently, periodical evaluations should be conducted to determine whether the target population is actually being influenced by these posters. Has the knowledge so acquired resulted in a chain of reactions culminating in a measurable end point, e.g., a rise in the number of children vaccinated or a rise in the number of mothers who have used ORT as the first line of treatment for a child with diarrhea?

C. Summary of Action Selected by Each Country

All participant countries expressed an interest in expanding communications activity to raise the demand for TT immunizations. Most proposed designing new messages or materials specifically for TT, as their EPI communications efforts have in the past focused only on the

childhood immunizations. Inter-sectoral collaboration with other government ministries, primarily ministries of information, was noted as crucial. Finally, several countries underlined the need for providing better information to health workers themselves, as they are often unaware of current policies or need more effective communications skills. A summary of the proposed activities by country to create demand appears in Table 3.

IX. ACTION PLANS FOR THE ACCELERATED CONTROL OF NNT

The complete texts of the draft action plans for each country are available from REACH. The participants will now endeavor to secure official MOH support for these plans. External agency representatives have a valuable financial role to play in supporting the participants in their attempts to implement the action plans. Follow up of the plans of action can be made in three ways:

- During routine country visits by WHO/AFRO, WHO/SRHDO or REACH. UNICEF, CCCD, SCF (UK), etc. could also be invited to participate in this follow-up.

- By short questionnaires submitted to the countries six months after the workshop, i.e., in January 1989.

- During EPI reviews.

A summary of the proposed TT immunization policies, strategies and activities appears by country in Table 4.

Eight countries are committed to immunizing all women of childbearing age, rather than only pregnant women. Five countries propose to adopt the recommended WHO immunization schedule of 5 doses of TT. This will then be the policy in all nine countries.

Five countries have newly decided to offer TT at child immunization clinics, rather than only at antenatal clinics. All countries are now committed to immunizing women at all contacts with the health system. Mass campaigns, schools, and markets will be used in varying degrees.

All of the countries emphasize TT in future communication strategies. All are committed to enhancing TBA training.

Six countries have proposed conducting NNT mortality surveys, including the two most populous countries in sub-Saharan Africa--Nigeria and Ethiopia. All countries will report NNT separately from other tetanus and all propose either to establish a sentinel surveillance system and/or to

TABLE 3

DEMAND CREATION

SUMMARY OF PROPOSED ACTIVITIES

SPECIFIC ACTIVITIES	ZIMBABWE	ETHIOPIA	GAMBIA	GHANA	LIBERIA	NIGERIA	SIERRA LEONE	TANZANIA	ZAMBIA
I. Assessing reasons for non-utilization of TT services									
. Conduct focus group research					+				
. Conduct/analyze KAP survey	+		+	+	+	+			
. Assess how well women are reached by current communication strategies	+								
. Other program evaluation/ investigation	+	+	+		+				
II. Information Dissemination on TT									
A. Printed Materials									
. Will develop new materials		+	+			+	+		
. Improve quality of existing materials; add TT to existing materials		+			+	+	+		
. Intensify dissemination of printed materials				+					+
B. Mass Media									
. Radio									
. Conduct audience research	+							+	
. Include information in existing broadcasts									
. Increase broadcast time or change to different time of day			+					+	+
. Television									
. Add EPI-specific broadcasts									+

TABLE 3
(continued)

C. Person to Person									
. Provide orientations or workshops to improve communications skills or awareness of nurses or other health workers.		+		+	+	+	+	+	+
. Use health promoters/ volunteers, community-level social mobilization workers, or NGOs for TT communications activities.			+	+	+		+		
. Organize community groups or meetings on TT							+		
. Home visits							+		
D. Other									
. Register and follow up women								+	
. Better coordination of other government units						+			
. Use drama and songs				+			+		
. Strengthen IEC units									
. Use more local language in materials				+					
. Involve local party or religious leaders to promote TT				+	+	+		+	

TABLE 4: PROPOSED TT IMMUNIZATION POLICIES, STRATEGIES, AND ACTIVITIES

	ETH	GAM	GHA	LIB	NIG	SIE	TAN	ZAM	ZIM
-TARGET GROUPS									
pregnant	+	+	+	+	+	+	+	+	+
childbearing aged women	+	-	+	+	*	+	*	*	*
children (2-14)	*	-	+/-*	-	+/-*	+	*	-	-
-WHO schedule (TT1, TT2, TT3, TT4, TT5)	+	+	+	+	*	*	*	*	*
-IMMUNIZATION APPROACHES									
ANC	+	+	+	+	+	+	+	+	+
child immun. clinics	+	+	*	*	*	+	+	*	*
all contacts	*	+	*	*	*	+	*	*	*
mass campaign	-	-	+	+	+	+	+	+	-
school	*	-	+/-*	+/-	*	+	*	+	-
market	-	-	-	+/-*	-	-	-	-	-
-TT-specific information	*	*	*	*	*	*	*	*	*
-Strengthening TBA training	*	*	*	*	*	*	*	*	*
-SURVEILLANCE									
NNT mortality surveys	+*	+	*	*	*	*	*	+	+
NNT reported separately	+	+	*	*	*	+	*	*	+
sentinel system	*	*	*	*	*	+	+	*	
local area monitoring	-	*	*	*	-	-	*	*	+
case investigation	-	*	-	-	-	-	-	-	*
-MONITORING									
coverage survey of TT ever received by mother of index child 0-11 months old	*	*	*	*	*	*	*	*	*
routine reporting by TT1, 2, 3, 4, 5 or TT1, 2 or booster, and by target group	*	*	*	+	+	+	+	*	*
routine monitoring by $\frac{TT2 + 3 + 4 + 5}{\text{pregnant women}}$	*	*	*	*	*	*	*	*	*
missed opportunity survey	*	*	*	*	-	-	*	*	+

+ current
+/- policy but not widely implemented
* proposed
- neither current nor proposed

continue local area monitoring. Two countries, namely Gambia and Zimbabwe, have already made sufficient progress in reducing NNT to plan to devote resources towards investigating the remaining cases.

A majority of countries newly proposed to report TT coverage routinely by TT1, TT2, TT3, TT4, and TT5 or by TT1, TT2, and TT booster. Most countries will report TT by target group.

All countries will monitor TT coverage among pregnant women using the formula:

$$\frac{TT2 + TT3 + TT4 + TT5}{\text{pregnant women}},$$

where pregnant women is assumed to equal the number of newborns.

Six countries newly proposed to conduct missed opportunity surveys for TT immunization.

X. ISSUES FOR FUTURE NNT WORKSHOPS

The Harare workshop was the first of a planned five such workshops scheduled in 1988 and 1989 in Africa. As such, lessons learned which may be applicable to future workshops are summarized in a separate document available from REACH.

XI. CONCLUSION

The participants worked very hard on the elaboration of their action plans. Their serious dedication and active participation made the workshop extremely productive. Now that they have returned home, it is essential that the international health community seize this opportunity to support them in a sustained acceleration for neonatal tetanus control.

ANNEX 1

WORKSHOP AGENDA

ANNEX 1

WHO/US AGENCY FOR INTERNATIONAL DEVELOPMENT (REACH) WORKSHOP FOR ACCELERATED CONTROL OF NEONATAL TETANUS HARARE, ZIMBABWE, 18-25 JULY 1988

AGENDA

Monday, July 18

08:00 - 09:00	Registration
09:00 - 09:30	Opening Ceremony
09:30 - 10:00	COFFEE BREAK
10:00 - 10:10	Administrative Arrangements
10:10 - 10:20	Election of Officers

1st Session: Situation Analysis: NNT in Africa

10:20 - 10:25	Objectives of session
10:25 - 10:40	Prevention of NNT through TT immunization (PLENARY) (Gasse)
10:40 - 10:55	Prevention of NNT through other strategies (PLENARY) (Kimemiah)
10:55 - 13:00	Country presentations on NNT situation (PLENARY: 15 minutes/country)
13:00 - 14:00	LUNCH BREAK
14:00 - 14:30	Discussion of Country Presentations (PLENARY)

2nd Session: Assessment of the Magnitude of NNT at Country Level

14:30 - 14:40	Objectives of the session (PLENARY)
14:40 - 15:30	WORKING GROUPS - analysis of available country data on magnitude of NNT - identification of problems
15:30 - 15:50	COFFEE BREAK
15:50 - 16:10	Summary of problems identified (PLENARY)
16:10 - 17:00	Design and execution of NNT mortality surveys and sample protocol (PLENARY) (Galazka)

17:00 - 17:15	Discussion (PLENARY)
18:00 - 19:30	RECEPTION

Tuesday, July 19

3rd Session: Surveillance of NNT

08:00 - 08:10	Objectives of the Session (PLENARY)
08:10 - 08:30	How to improve surveillance of NNT through routine and sentinel reporting systems (PLENARY) (Dando)
08:30 - 08:45	Discussion (PLENARY)
08:45 - 09:15	How to carry out NNT case investigations (PLENARY) (Gasse)
09:15 - 09:30	Discussion (PLENARY)
09:30 - 09:50	COFFEE BREAK
09:50 - 10:10	Recognize the Disease (Video)
10:10 - 13:00	WORKING GROUPS - evaluating need for morality surveys - identifying selected actions to improve NNT surveillance
13:00 - 14:00	LUNCH BREAK

4th Session: Monitoring TT coverage of women by routine reporting and cluster surveys

14:00 - 14:10	Objectives of the session (PLENARY)
14:10 - 15:10	WORKING GROUPS - analysis of available routine and survey data on TT coverage - identification of problems in monitoring coverage
15:10 - 15:30	COFFEE BREAK
15:30 - 16:10	How to assess TT coverage through routine reporting (PLENARY) (Steinglass)
16:10 - 16:30	Discussion (PLENARY)
16:30 - 17:10	How to carry out TT coverage surveys by cluster sampling technique (PLENARY) (Gasse)

17:10 - 17:30	Discussion (PLENARY)

Wednesday, July 20

08:00 - 09:00	WORKING GROUPS - selected activities to improve monitoring of TT coverage
09:00 - 09:30	Discussion of how to ensure TT records are retained by women (PLENARY)
09:30 - 09:50	COFFEE BREAK

5th Session: Alternative immunization strategies to increase TT coverage

09:50 - 10:00	Objectives of the session (PLENARY)
10:00 - 10:45	WORKING GROUPS - advantages and disadvantages for selection of various target groups and TT immunization strategies - analysis of the country situation
10:45 - 11:05	Immune response to TT (PLENARY) (Galazka)
11:05 - 11:25	EPI Global Advisory Group (GAG) recommendations - 1987 (PLENARY) (Gasse) - target groups - TT immunization schedule - immunization strategies
11:25 - 11:45	How to carry out missed opportunity surveys for immunization of children and women (PLENARY) (Dando)
11:45 - 12:15	Discussion (PLENARY)
12:15 - 12:45	Cost issues related to NNT control strategies (PLENARY) (Arnold/Brenzel)
12:45 - 13:00	Discussion (PLENARY)
13:00 - 14:00	LUNCH BREAK
14:00 - 15:15	WORKING GROUPS - work through cost module
15:15 - 15:35	COFFEE BREAK

15:35 - 16:45	WORKING GROUPS - select alternative target group, immunization strategies, and immunization schedules to increase TT coverage
16:45 - 17:30	Summary of strategies identified (PLENARY)

Thursday, July 21

6th Session: Social mobilization and communication strategies for NNT control

08:00 - 08:10	Objectives of session (PLENARY)
08:10 - 08:40	How to assess barriers to coverage (PLENARY) (Alli)
08:40 - 09:00	Discussion (PLENARY)
09:00 - 09:40	Identification, implementation and evaluation of communication strategies to increase utilization of services (PLENARY) (Alli)
09:40 - 10:00	COFFEE BREAK
10:00 - 10:20	Discussion (PLENARY)
10:20 - 11:20	WORKING GROUPS - brainstorming on social mobilization and communication strategies to increase utilization of services
11:20 - 12:30	WORKING GROUPS - analysis of current NNT mobilization and communication activities - identification of problems and planning of mobilization and communication strategies
12:30 - 14:00	Summary of action selected by each country (PLENARY)
14:00 - 17:30	FREE TIME

Friday, July 22

7th Session:	Preparation of detailed country action plans for NNT control
08:00 - 08:10	Objectives of the session (PLENARY)
08:10 - 09:30	Finalization of action plans (WORKING GROUPS) - timelines, resources, responsibilities, output indicators, etc.
09:30 - 09:50	COFFEE BREAK
09:50 - 13:00	Finalization of action plans (WORKING GROUPS)
13:00 - 14:00	LUNCH BREAK
14:00 - 15:30	Detailed programming on specific activities of the action plan (WORKING GROUPS) - protocol for surveys - implementation of new strategies - surveillance activities and monitoring coverage - communication strategies
15:30 - 15:50	COFFEE BREAK
15:50 - 17:30	Detailed programming (WORKING GROUPS)

Saturday, July 23

8th Session:	Preparation of detailed country action plans for NNT control (continued)
08:00 - 09:30	Detailed programming (WORKING GROUPS)
09:30 - 09:50	COFFEE BREAK
09:50 - 12:00	Detailed programming and preparing presentation of country action plans (WORKING GROUPS)
12:00 - 13:00	Presentation of country action plans (PLENARY: 15 minutes/country)
13:00 - 14:00	LUNCH BREAK
14:00 - 15:30	Presentation of country action plans (PLENARY: 15 minutes/country)
15:30 - 15:50	COFFEE BREAK
15:50 - 16:45	Fine-tuning detailed programs (WORKING GROUPS)
Sunday, July 24	GROUP SIGHT-SEEING

Monday, July 25

9th Session:	Implementation of Action Plans
08:00 - 08:20	Objectives of the Session (PLENARY)
08:20 - 09:30	WORKING GROUPS - lists of tasks, responsibilities, target dates, and resources required to implement action plan
09:30 - 10:00	COFFEE BREAK AND EVALUATION OF THE WORKSHOP
10:00 - 11:15	WORKING GROUPS - lists of tasks, etc. to implement action plan and development of tracking system to periodically monitor post-workshop progress
11:15 - 11:45	Result of evaluation of the Workshop
12:15 - 12:30	CLOSING CEREMONY

ANNEX 2

WORKSHOP OBJECTIVES

ANNEX 2

WHO/US AGENCY FOR INTERNATIONAL DEVELOPMENT (REACH)
WORKSHOP FOR ACCELERATED CONTROL OF NEONATAL TETANUS
HARARE, ZIMBABWE, 18-25 JULY 1988

WORKSHOP OBJECTIVES

OVERALL OBJECTIVE:

The development of country-specific Action Plans to accelerate the reduction of incidence and mortality from neonatal tetanus by immunization of women with tetanus toxoid and by improved MCH services.

SPECIFIC OBJECTIVES:

To achieve the overall objective there will be nine sessions covering the following topics:

1. Country presentations on the neonatal tetanus situation including current control strategies.

2. Assessment of the magnitude of neonatal tetanus at country level reviewing available data.

3. Surveillance of neonatal tetanus.

4. Monitoring of TT coverage of women by routine reporting and cluster surveys.

5. Alternative immunization strategies to increase tetanus toxoid coverage.

6. Social mobilization and communication strategies for neonatal tetanus control.

7/8. Development of detailed country action plans to accelerate the control of neonatal tetanus.

9. Implementation of the Action Plan.

For each of the first six sessions participants will be asked to review their available data, identify their problems and causes of the problems, and select appropriate actions to correct the problems.

The seventh and eighth sessions will be dedicated to the development of the final Action Plan, putting together all selected actions and providing a time schedule for their implementation.

The last session will address the actions necessary for the follow-up of the Action Plan developed.

The workshop will improve participants' understanding and skills related to the above topics.

ANNEX 3

SESSION OBJECTIVES

SESSION 1

Situation Analysis

Session Objective:

To present available data on the neonatal tetanus situation at country level on selected indicators.

Specific activities will include:

- Presentation on Prevention of Neonatal Tetanus through Immunisation in the African Region.
- Presentation on Prevention of Neonatal Tetanus through Other Strategies in the African Region.
- Country presentations on Neonatal Tetanus situation on:
  - Magnitude of the Problem
  - Surveillance of Neonatal Tetanus
  - Target Groups
  - Immunisation Strategies used
  - Other Strategies
  - Social Mobilization strategies
- Discussions on achievements and problems through other strategies than immunization.

SESSION 2

Assessment of the Magnitude of Neonatal Tetanus at Country Level

Session Objective:

Each country group will review and comment on available data on the magnitude of neonatal tetanus including:

- NT Survey date if available
- Routine Reporting of NT cases
- Completeness of Reporting
- Impact of Coverage in 1987
- Identification of high risk areas
- Identification of high risk groups
- Results of case investigation

Participants will then identify major problems existing in their respective countries with the data available.

The methodology for conducting NNT mortality surveys will be presented to participants and discussed.

SESSION 3

Surveillance of NT

Session Objectives:

Participants will:

- Analyse existing surveillance systems for NT.
- Learn how alternative systems can complement the routine reporting system.
- Follow a method for investigation of cases of NT.
- Plan actions to improve on the present national surveillance for NT.

SESSION 4

Monitoring TT Coverage of Women by Routine Reporting and Cluster Surveys

Session Objectives:

Participants will:

- Analyse in working groups the existing routine and survey data on TT coverage and identify problems in monitoring coverage.
- Learn in plenary sessions how to assess TT coverage through routine reporting and cluster surveys.
- Identify activities for improving the recording and reporting of TT and the monitoring of coverage.
- Discuss in a plenary session the need for TT records retained by the woman.

SESSION 5

Alternative Immunization Strategies to Increase TT Coverage

Session Objectives:

The overall objective is for each country to select the most appropriate strategies to increase TT coverage. To achieve this objective, participants will:

- Analyze the advantages and disadvantages of selecting different immunization strategies and review present country strategies.

- Learn the results of the 1987 WHO EPI Global Advisory Group Meeting relevant to NT control strategies.

- Learn major points about the methodology to carry out missed opportunity surveys for immunization.

- Explore the methodology for costing various strategies.

- Identify the most appropriate strategies and their implications.

SESSION 6

Social Mobilization and Communication Strategies for NT Control

Session Objectives:

Participants will:

- Learn to assess what communication and cultural barriers to acceptance of TT immunization exist and determine their extent and relative importance.

- Learn to assess current communications activities to increase demand for TT.

- Share experiences for solutions to communications problems.

- Develop country-specific action plans to increase the demand for TT immunization services.

SESSIONS 7 & 8

Preparation of detailed country action plans for NT control

Session Objectives:

- By the end of the workshop each country/participant in the workshop will have formulated a broad action plan for NT control to be presented to his Government/Ministry of Health for further discussion, adoption and implementation.

- Each plan will indicate problem areas, select appropriate solutions, indicate who will be responsible for action, and identify the resources needed to implement the plans.

- Each country will develop various strategies and monitoring indicators for implementation and assessment of the programme impact on NT.

SESSION 9

Implementation of Action Plans

Session Objectives:

Participants will:

- Elaborate tasks for the implementation of their action plans to include:
  - Units/persons responsible
  - Time frame for implementation
  - Resources required, both internal and external.
- Identify a monitoring and evaluation system for follow-up of implementation of the action plan.

ANNEX 4

LIST OF PARTICIPANTS, ORGANIZATIONS, RESOURCE PERSONS/FACILITATORS & ADMINISTRATIVE STAFF

ANNEX 4

WHO/US AGENCY FOR INTERNATIONAL DEVELOPMENT (REACH) WORKSHOP FOR ACCELERATED CONTROL OF NEONATAL TETANUS
HARARE, ZIMBABWE
18-25 JULY 1988

LIST OF PARTICIPANTS, ORGANIZATIONS, RESOURCE PERSONS/ FACILITATORS, AND ADMINISTRATIVE STAFF

I. Participants

Country	Name	Title	Affiliation
Ethiopia	Mr. Tadele Tedla	Head, Epidemiology Dept.	MOH
	Dr. Wondimagegnehu Alemu	Medical Officer, EPI	MOH
Gambia	Mr. Karamo Sanneh	EPI Manager	MOH
	Mr. Ismaila Njie	Acting MCH Coordinator	MOH
	Mr. Kebba O Jaiteh	Epidemiology Officer	MOH
Ghana	Dr. Phyllis Antwi	Acting EPI Manager	MOH
	Dr. Sam Bugri	Acting Prin Epidemiologist	MOH
	Mrs. B Dason	MCH/FP Focal Point	MOH
Liberia	Mr. James Goaneh	Dir, EPI	MOH
	Dr. Rose J Macauley	Dir, Fam Hlth Division	MOH
	Dr. Moses K Galakpai	Epidemiologist Dep Chief Medical Officer for Preventive Services	MOH
Nigeria	Dr. P Y Odunsi	EPI/CCCD Nat'l Coordinator	MOH
	Mrs. E M Alabi	MCH Coordinator	MOH
Sierra Leone	Dr. Noah Conteh	EPI Manager	MOH
	Dr. Bailah Leigh	MCH Director	MOH
	Dr. Clifford Kamara	Head, PMISU	MOH
Tanzania	Mr. K Kagaruki	Acting EPI Manager	MOH
Zambia	Dr. J Mbomena	EPI Manager, MCH/FP Spec	MOH
	Mrs. B M Katukula	UCI Nat'l Coordinator	MOH
	Dr. H Mutambo	Provincial Med Officer & Epidemiologist	MOH
Zimbabwe	Ms. E Serima	EPI Manager	MOH
	Dr. R Munochiveyi	Epidemiologist	MOH
	Dr. B Manyame	MCH Coordinator	MOH

II. Organizations

Organization	Name	Title	Duty Station
CCCD	Mrs. Eugenie Kromah	Project Manager & Dir for Communicable Disease Control	Liberia
SCF(UK)	Dr. Titia Warndorff	Epidemiologist	Zimbabwe
UNICEF	Dr. Anton Dalhuijsen	Epidemiologist/EPI Project Officer	Ghana
	Mrs. Joyce Sherman	National Officer for Hlth Programs	Liberia
	Mr. Aliu Bello	Hlth Prog Off	Nigeria
	Dr. Valerian Kimati	Senior Prog Off	Nigeria
	Dr. Theresa Ganda	Prin Med Officer	Sierra Leone
	Mr. Tony Naleo	Asst Proj Officer	Tanzania
WHO	Mr. William Mntenga	Hlth Info & Doc Off	Tanzania
WHO/SRHDO III	Ms. Frances Giddings	Nurse Ed/MCH	Harare
	Mr. Timo Heikkila	Cold Chain Engin	Harare
	Mr. Musoni Mpayamaguru	Technical Officer	Harare

III. Resource Persons/Facilitators

Dr. M Alli	UNICEF	Proj Off EPI/CSD	Zimbabwe
Dr. R Arnold	REACH	Sr Tech Officer	Washington
Mr. J Z Barenzi	MOH	EPI Manager	Uganda
Dr. B Dando	WHO/SRHDO III	Epidemiologist	Harare
Dr. A Galazka	WHO/EPI/HQ	Medical Officer	Geneva
Dr. F Gasse	WHO/EPI/HQ	Medical Officer	Geneva
Dr. S G Kimemiah	WHO/SRHDO III	Medical Officer	Harare
Ms. C Rawn	REACH	Technical Officer	Washington
Mr. R Steinglass	REACH	Sr Tech Officer	Washington
Dr. S Wassilak	CDC	Med Epidemiologist	Atlanta

IV. Administrative Staff

Organization	Name	Title	Duty Station
Mr. S Antey	WHO/SRHDO III	Admin Officer	Harare
Ms. M Pennay	REACH	Dep Administrator	Washington
Mr. S Ruhmally	WHO/SRHDO III	Admin Assistant	Harare

ANNEX 5

BACKGROUND MATERIALS

WHO/US AGENCY FOR INTERNATIONAL DEVELOPMENT (REACH)
WORKSHOP FOR ACCELERATED CONTROL OF NEONATAL TETANUS
HARARE, ZIMBABWE, 18-25 JULY 1988

BACKGROUND MATERIALS

SESSION 1: Situational Analysis in Africa

EPI Update, Neonatal Tetanus, The Invisible Killer, WHO September 1986.

Tetanus Toxoid Immunization: The Neglected Component of EPI, A. Radford. Health Policy and Planning: 2(1), 90-93, 1987.

Neonatal Tetanus: Potential for Elimination in the World, A. Hinman, S. Foster and S. Wassilak, Pediatr. Infect. Dis., 6:813-816, 1987.

Neonatal Tetanus in Africa, Weekly Epidemiological Record, 1987, 42, 305-312.

Tetanus Control, Weekly Epidemiological Record, 1987: 62, 377-384.

SESSION 2: Assessment of the Magnitude of NNT at Country Level

Neonatal Tetanus - An Underreported Scourge, J.P. Stanfield and A. Galazka, World Health Forum; 62:647-669, 1984.

Guidelines on the Community-Based Survey on Neonatal Tetanus Mortality, A. Galazka and G. Stroh, WHO (EPI/GEN/86.8).

SESSION 3: Surveillance of NT

EPI Target Disease Surveillance and Disease Reduction Targets, T. Dondero, WHO (EPI/GEN/84.6).

EPI Update: Disease Surveillance - Information for Action, WHO, December 1987.

Guidelines for the Investigation and Control of Outbreaks of EPI Target Diseases, M. A. Strassburg, WHO Geneva (EPI/GEN/84.7/Rev. 1).

How to Improve Surveillance of NNT through Routine Sentinel and Local Area Monitoring Reporting Systems, presentation by Dr B. Dando, WHO/SRHDO III, Harare, Zimbabwe.

SESSION 4: Monitoring TT Coverage of Women by Routine Reporting and Cluster Surveys

Evaluate Immunization Coverage, Module from WHO EPI Mid-Level Managers Course, WHO, Geneva, June 1988.

Child's Immunization Card/Growth Chart, WHO Geneva.

Sample Tetanus Toxoid Immunization Card, WHO, Geneva.

How to Assess TT Coverage Through Routine Reporting. Presentation by Mr. R. Steinglass, REACH Project, Washington, DC.

SESSION 5: Alternative Immunization Strategies to Increase TT Coverage

Issues in Neonatal Tetanus Control, WHO (GAG/87/WP.1).

Protocol for the Assessment of Missed Opportunities for Immunization, P. Sato, (WHO/EPI/GEN/88.6).

Missed Opportunities for Immunization, F. Gasse, Weekly Epidemiological Record, WHO/Geneva.

The Epidemiology of Non-Vaccination, PAHO EPI Newsletter, Vol. 8, Number 5, October 1986.

Prevention of Neonatal Tetanus Through Immunization, WHO (EPI/GEN/86.9/Rev 1).

Preventing Neonatal Tetanus, Module from Immunization in Practice: A Guide for Health Workers who Give Vaccines, WHO (EPI/PHW/87/8).

How to Estimate Incremental Resource Requirements and Costs of Alternative TT Immunization Strategies, L. Brenzel, REACH, 1988.

SESSION 6: Social Mobilization and Communication Strategies for NT Control

Conducting Focus Group Sessions, E. Folch-Lyon & John F. Trost. Studies in Family Planning, Vol. 12, Number 12, December 1981.

UCI 1990 Training Package, Session 10, Developed by WHO and UNICEF, July 1987.

ANNEX 6

MATRICES TO GUIDE WORKING GROUPS

WORKING GROUP

SESSION 2: Assessment of the Magnitude of NNT

Country:

Achievements (Comments)	Problems (Issues Requiring Resolution)	Causes of Problems (Principal Ones)
1. NNT Mortality Survey - year - area - neonatal mortality rate - NNT mortality rate (%) - estimated absolute no. of deaths		
2. Routine Reporting - cases (84-87) - sentinel?		
3. High Risk Areas (identified)		
4. High Risk Groups (identified)		
5. Case Investigations (results)		
6. Impact of TT Coverage on Incidence		

WORKING GROUP

SESSION 3: Selection of Activity to Improve Surveillance of NNT

Country:

Selected Activities (solutions)	Justifications (why?)	Time Schedule (when?)	Responsibility (by whom?)	Resources			
				Technical		Financial	
				Govt	Ext	Govt	Ext

Session 4

Monitoring TT Coverage of Women by Routine Reporting and Cluster Surveys

Task for working groups:

(19 July): analyze existing routine and survey data on TT coverage
(20 July): select activities to improve TT monitoring

Answer these questions on the attached page

1. Is TT reported in your country by dose, including all of the following: TT1, TT2, TT3, TT booster?

2. Is TT reported for each of your target groups? (for example, pregnant women, other women of childbearing age, other)

3. Is TT2 coverage calculated according to the formula:

$$\frac{\text{TT2 in target group}}{\text{Target group}} \times 100$$

4. Is TT recorded on a TT card given to the woman?

5. (If given a card) Do the majority of women keep it?

6. Was any EPI cluster survey done during past 24 months?

7. Did your last cluster survey include TT coverage?

8. (If the survey included TT) Were mothers of children 0-11 months old surveyed?

9. (If the survey included TT): Were all TT immunizations which were ever received counted up to the birth of the child?

   (If not) Which TT were counted:

   - up to time of survey OR
   - only during the pregnancy of index child OR
   - other

Session 4: Monitoring of TT Coverage of Women by Routine Reporting and Cluster Surveys

Country: _____

Indicators (Write YES or NO. If no, specify.)	Problems with these indicators (Issues requiring resolution)	What are the principal causes of these problems?
1		
2		
3		
4		
5		
6		
7		
8		
9		

WORKING GROUP

SESSION 4: Selection of Activity to Improve Monitoring of TT

Country:

Selected Activities (solutions)	Justifications (why?)	Time Schedule (when?)	Responsibility (by whom?)	Resources			
				Technical		Financial	
				Govt	Ext	Govt	Ext

WORKING GROUP MATRIX

Date: .....

Session 5: Advantages and Disadvantages of different target groups for TT immunization

Country: .....

Target Group	Advantages	Disadvantages	Country Target Groups	
			Current	Future
Pregnant Women				
Child Bearing age women (including pregnant women)				
School children				

WORKING GROUP MATRIX

Date: .....

Session 5: Advantages and Disadvantages of different immunization strategies

Country: .....

Immunization Strategies	Advantages	Disadvantages	Country's Strategy	
			Current	Future
Immunization of pregnant women attending antenatal clinics				
Immunization of women of child bearing age at child immunization clinics				
Immunization of women when they are in contact with Health Center for whatever reason (Curative/Preventive)				
Mass Campaign				
Immunization of women on Markets				

WORKING GROUP MATRIX

Date: .....

Session 5: Selection of alternative target group, strategy and immunization schedule

Country: .....

Selected New Target Group(s)	Justification (Why?)	Time Schedule (When?)	Responsibility (By Whom?)	Resources			
				Technical		Finances	
				Cover	Ext	Gov	Ext
Selected New Immunization Strategies							
Selected Immunization Schedule							

SESSION 6: Social Mobilization and Communications Strategies for NT Control

Working Group 1 (3 mixed groups)

Objective

Participants will share experiences in overcoming social and communications barriers to increasing tetanus immunization coverage.

A) List problems identified as barriers.

B) List possible strategies for improving utilization of TT services by overcoming barriers.

Working Group 2

Objectives:

Participants will:

- identify current communication activities directed at raising TT coverage

- assess the effectiveness of current communication activities directed at raising TT coverage

- plan for future communication activities directed at raising TT coverage

- plan for activities to assess and overcome other barriers to TT immunization.

Demand Creation (How to develop a strategy to create demand)

Please review all promotional and educational materials for your country on TT immunization.

Issues to consider for each item include:

a) to whom is targeted for?

b) what is its specific message?

c) on what basis was this message chosen?

d) is the message clear to its target group?

e) how can one know that the message is being well received?

f) are the materials mutually self-supporting?

g) are training curriculae and materials consistent with the media materials?

SESSION 6: Social Mobilization and Communications Strategies

Working Group 2

Country:

Current Communications/Social Mobilization Activities	Problems with Current Activities	Proposed solutions or future Activities
1. Assessment of reasons for non-utilization of existing TT immunization services		
2. Information Dissemination		
a) printed materials (includes posters, stickers, etc.)		
b) mass media (includes television and radio)		
c) person to person (includes health education by health workers, etc.)		
d) any other activities.		

SESSION 6: Social Mobilization and Communications Activities

Working Group 2 - continued

Country:

Proposed Solutions or Selected Activities (from previous page)	Justification	Time Schedule (when?)	Responsibility (by whom)	Resources			
				Technical Gov	Technical Ext	Financial Gov	Financial Ext

1. <u>The Document Knowledge, Attitudes and Practices (KAP) Studies</u>

Look at questions 3, 4, 6, 11, 13, 20, 43 and 44. You will find hypothetical answers. For each answer write down what specific remedial action you would take to promote higher immunization coverage.

2. <u>Study the Focus Group Research Report from Syria</u>

List specific messages you would disseminate to counteract wrong beliefs.

ANNEX 7

WORKSHOP ASSIGNMENTS

ANNEX 7

SESSION CHAIRMEN

Session	Country	Name
1	Zimbabwe	Dr. Manyame
2	Gambia	Mr. Njie
3	Liberia	Dr. Galakpai
4	Nigeria	Dr. Odunsi
5	Sierra Leone	Dr. Conteh
6	Tanzania	Mr. Kagaruki
7	Zambia	Dr. Mbomena
8	Ethiopia	Mr. Tadela
9	Ghana	Dr. Bugri

SESSION RAPPORTEURS

Session	Country	Name
1	Zambia	Dr. Mutambo & Kimemiah
2	Tanzania	Mr. Mntenga
3	Sierra Leone	Dr. Clifford Wurie Kam
4	Nigeria	Mrs. Alabi
5	Ghana	Dr. Antwi
6	Liberia	Dr. R Macauley
7	Gambia	Mr. K O Jaiteh
8	Ethiopia	Dr. Wondimagegnehu
9	Ghana	Dr. P Antwi

WORKING GROUPS

Country	Facilitator/Resource Person
Ethiopia	Steinglass
Gambia	Rawn
Ghana	Barenzi
Liberia	Wassilak
Nigeria	Galazka
Sierra Leone	Arnold
Tanzania	Dando
Zambia	Kimemiah
Zimbabwe	Gasse

WORKSHOP COORDINATORS

Dando

Steinglass

WORKSHOP RAPPORTEUR

Pennay

ANNEX 8

COUNTRY PRESENTATION FORMAT

COUNTRY PRESENTATION FORMAT

COUNTRY:

1. GENERAL INFORMATION

1.1 Total population of country in 1987:
1.2 crude birth rate:
1.3 population of women 15-44 years:

2. MAGNITUDE OF THE NEONATAL TETANUS PROBLEM

2.1 From neonatal tetanus (NNT) mortality surveys (if available):

- year of the survey:
- area (urban, rural,nation-wide):
- No of live births surveyed:
- No of neonatal deaths surveys:
- No of NNT deaths surveyed:
- rate of NNT deaths per 1000 live births:
- estimated absolute number of NNT deaths for the country:

2.2 From routine reporting for the entire country:

year	1984	1985	1986	1987
cases				
deaths				
case fatality rate				

2.3 Completeness of routine reporting in 1987:

(NNT cases reported / NNT cases estimated) x 100

2.4 Disease reduction targets and TT coverage for the years :(from EPI action plan)

	Disease	Coverage
-1987:		
-1988:		
-1989:		
-1990:		

2.5 High risk areas and groups identified (specify):

3. TT IMMUNIZATION COVERAGE

3.1 Progress of TT coverage since 1984:

Note: specify if coverage figures obtained by estimation through routine reporting system or cluster coverage surveys (nation-wide). Figures can be obtained by dividing number of TT1, TT2, TT3 doses administered by the target population.

year	1984	1985	1986	1987
TT 1				
TT 2				
TT 3 or boosters				

3.2 Drop-out rate for year 1987:

$$\frac{TT\ 1 - (TT\ 2\qquad)}{TT\ 1} \times 100 =$$

3.3 Percentage of women with immunization cards in 1987 :
(in cluster coverage surveys)

3.4 Percentage of children under 1 year immunized with BCG, DPT3, MEASLES:

year	1984	1985	1986	1987
BCG				
DPT3				
MEASLES				

note: specify if figures obtained by estimations or coverage surveys.

4. STRATEGIES TO PREVENT NNT

4.1 Target group(s) for TT immunization: (yes or no)

- Pregnant women only:
- All child bearing age women:
- Scool children:
- Other(specify):

4.2 TT immunization schedule:

TT1	
TT2	
TT3	
TT4	
TT5	

4.3 List of contraindication(s) to TT immunization (if any):

-
-

4.3 TT immunization approaches:(put yes or no according to approaches used)

- Immunization of pregnant women during antenatal visits:
- Immunization of women accompagnying a child to an immunization session:
- Immunization of women accompagnying a child for a pediatric consultation:
- Immunization of women visiting a health center for any reason:
- Immunization of mothers in markets:
- Mass campaign:
- Immunization of school children at school entrance and school leaving:
- Is TT vaccine offered every working day to women?
- Is TT vaccine offered in every health center immunizing children?:

4.4 Training of TBA's:

- Estimated percentage of home deliveries in 1987:
- Estimated total number of TBA's (nation-wide) in 1987:
- Number of TBA's trained:

  1984:
  1985:
  1986:
  1987:

5. SURVEILLANCE AND MONITORING (answer by yes or no)

5.1 Do you have a standard case definition for NNT? (if yes specify)

5.1 Is NNT reported separately from other tetanus cases?:

5.2 Do you have sentinel reporting sites ?

5.3 Do you carry out case investigation?:(results)

5.4 Have you carried out a missed opportunity survey for immunization?

6. LIST OF ACCELERATED ACTIVITIES CARRIED OUT SINCE 1986 TO INCREASE TT COVERAGE AND IMPROVE NNT SURVEILLANCE (specify what activity, where and when)

-
-
-
-

7. LIST OF MAJOR PROBLEMS AND PLANNED ACTIVITIES TO INCREASE TT COVERAGE AND ACCELERATE NNT SURVEILLANCE

7.1 Major problems:

-
-
-

7.2 Major planned activities:(specify activity, date of execution and collaborative agencies)

-
-
-
-

8. WHAT ARE THE SUPPORTING AGENCIES AND THEIR CONTRIBUTION FOR EPI IN YOUR COUNTRY?

AGENCY	TYPE OF CONTRIBUTION
-	
-	
-	
-	

NOTE: Every national country team should bring to the workshop the following:

- Overall EPI action plan

- Latest population figures for the country and by province, towns and villages if available.

- Detailled map of the country, showing administrative areas.

- Samples of reporting forms used for EPI and other reported diseases at each level of reporting.

- Sample of reporting forms for EPI vaccines administered from each level of collection.

- Sample of child immunization card, woman's immunization card, registration book of health centers .

- NNT mortality survey report if done.

- Report of most recent EPI review.

- Samples of health educator materials used for NNT or TT.

- Sections of national training curricula for doctors, nurses and immunization staff concerning NNT control.

9. TT IMMUNIZATIONS PERFORMED DURING 1985-1986-1987

	1985			1986			1987		
	PREGNANT WOMEN	WOMEN 15/44	OTHERS *	PREGNANT WOMEN	WOMEN 15/44	OTHERS *	PREGNANT WOMEN	WOMEN 15/44	OTHER *
TT 1									
TT 2									
TT 3 OR OTHER									

* Specify:

10. CONSUMPTION OF TT VACCINES DURING 1985-1986-1987 (in doses)

- 1985:
- 1986:
- 1987:

11. TOTAL NUMBER OF HEALTH FACILITIES:
(country-wide)

12. NUMBER OF HEALTH CENTERS PROVIDING TT IMMUNIZATIONS:
(country-wide)

13. NUMBER OF HEATH CENTERS PROVIDING CHILDREN IMMUNIZATION:
(country-wide)