Table 8

NEONATAL TETANUS DEATH RATE/1000 LIVE BIRTHS & % OF ALL NEONATAL DEATHS BASED ON SAMPLE SURVEYS (1978–1985).

COUNTRY	NEONATAL TETANUS (DEATHS/1000)	% OF ALL NEONATAL DEATHS
BANGLADESH	27	56
BHUTAN	13	67
BURMA		
(EPI areas)	3	21
(Non–EPI areas)	9	41
CAMEROON	7	
DEMOCRATIC YEMEN	4	20
EGYPT(Urban)	3	
INDIA (Rural)	5–67	16–72
(Urban)	0–15	0–59
INDONESIA		
(Rural)	11	51
(Urban)	7	40
IVORY COAST	18	53
KENYA	11	67
MALAWI	12	41
NEPAL	15	39
PAKISTAN	31	60
PHILIPPINES	6	48
SOMALIA	21	23
SUDAN	9	32
SYRIAN ARAB REP.	5	
THAILAND	5	23
YEMEN ARAB REP.	3	8
BAHRAIN	<1	1

EPI – Expanded Programme on Immunization.

2. Tetanus toxoid immunization for all pregnant women during the antenatal period in all the clinics, government and private, must be continued. In those cases where doubt concerning the immune status exists, patient can be screened using ELISA technique for assessment of antitoxin level [14].

   Non-pregnant women who have not previously been immunized, need two doses of tetanus toxoid at least one month apart to ensure protection for the next baby and its mother. A booster dose after one year and a final dose after 5–10 years would give a lifelong immunity.

We also suggest the need to immunize expatriate women who come from countries where immunization is not compulsory against tetanus. This could ideally be introduced at the time of their medical check-up by the Medical Commission.

In addition to primary DTP immunization boosters are needed at school age and at puberty. Although we have a high coverage, compulsory immunization of pre-school children, as a prerequisite for enrolling at school, may help in achieving a 100 percent coverage.

For the second group at risk, namely adult non-pregnant women in the childbearing period, we recommend that the immunization programme should now shift from vaccinating only pregnant women to administering tetanus toxoid to all future mothers, whenever they come into contact with the health services. (This in fact has been recommended by WHO – EPI Advisory Committees 1983 [15].

The rate of hospital deliveries on the island between 1978-84 is continuously increasing as can be seen in Table 9. Bahrain being a small state all deliveries could be done in hospitals. This will assure that all deliveries are conducted under optimal hygienic conditions, thus further decreasing the risk of tetanus complicating childbirth.

Table 9

The Rate of Hospital deliveries Among All Registered in Bahrain Between 1978-84

Year	*Total Live Births Inside Bahrain*	*Hospital No.*	*Delivery %*	*Home No.*	*Delivery %*	*Abroad*	*Total Registered Live-Births*
1978	9398	7899	84.0	1499	16.0	281	9679
1979	9664	8308	86.0	1356	14.0	210	9874
1980	10140	8843	87.2	1297	12.8	269	10409
1981	10598	9709	91.6	889	8.4	108	10706
1982	10219	9609	94.0	610	6.0	128	10347
1983	11153	10518	94.3	635	5.7	278	11431
1984	11165	10581	94.8	584	5.2	355	11520

CONCLUSION

Tetanus prevalence from Bahrain shows very clearly that the new approach of improved maternity care, with maternal immunization gives the quickest and best results in eliminating neonatal and maternal tetanus. The general childhood vaccination with the triple vaccine also holds the hope of long term protection of all the other sections of the community.

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