

REVIEW

Survey of Tetanus in Bahrain Between 1970 – 1986

By Rajab K.E. * and Ardati K. **

ABSTRACT

This study presents an analysis of all cases of tetanus patients who were treated in the Intensive Care Unit of the Salmaniya Medical Centre between 1970 to 86.

The analysis reveals a decline in the incidence of tetanus which began with the introduction of childhood vaccination. The dramatic fall in case occurrence, however, came with the implementation of the Expanded Programme of Immunization (EPI) and the progressive rise in hospital deliveries. Death due to tetanus has not been reported since 1982 and no case of neonatal tetanus was reported after 1984.

It is estimated that there continues to be more than a million cases of tetanus per year worldwide, and that at least 600,000 of these cases, which result in death, are due to neonatal tetanus mostly in the developing world ^{1, 2, 3}.

Although these figures are several times greater than the previous calculations, Bytchenko of the WHO regards it as an underestimate of the actual situation ⁴.

Recently two major neonatal tetanus surveys were planned and executed by countries in South East Asia, the Indian Sub-continent, and the Eastern Mediterranean Regions ⁵. Based on the mortality rate found in these surveys it is estimated that about 500,000 deaths from neonatal tetanus occur annually in the WHO South East Asia and Eastern Mediterranean regions.

Whilst the hidden nature of tetanus conceals the real magnitude of the problem in developing countries, its incidence in most of Europe, North America, Japan and the USA declined steadily to a very low level ⁶. In Bahrain the earliest report of vaccination against tetanus goes back to 1957, when DTP vaccine was given to 19 children, each receiving 3 doses over a 3 week period ⁷. By 1962, less than 200 children had received full doses of DTP. From 1963 onwards, DTP vaccination picked up steadily. From the early 1970, tetanus has become a notifiable disease in Bahrain ⁸.

In 1978, the public health directorate (PHD) implemented the expanded programme of immunization (EPI), which was suggested by the WHO, against the six childhood diseases ⁹. The EPI aimed at reducing the incidence of death due

* Assistant Professor
Human Structure Division
Faculty of Medicine and Medical Sciences
Arabian Gulf University
State of Bahrain

** Assistant Professor
Human Function Division
Faculty of Medicine and Medical Sciences
Arabian Gulf University
State of Bahrain

to tetanus to less than one per 1000 live birth by the 1990 (Fig 1). As a further step to eliminate neonatal tetanus the PHD recommended that all women attending the hospital, health and private clinics must also be immunized against tetanus. This included an initial injection of tetanus toxoid between the 16th & 18th week of gestation followed by another injection 2 months later and finally a booster dose prior to the expected date of delivery.

During this period tetanus vaccination became available in all antenatal clinics, Health Centres, Paediatric Clinics, Accident & Emergency, Private Hospitals and Private Clinics.

METHODS

The following figures of tetanus have been obtained from the tetanus register of the Intensive Care Unit and the files of tetanus patients in Salmaniya Hospital. The rest of the information, relating to the situation in Bahrain between 1952 and 1970, was obtained from the records and reports of the Public Health Department for that period, and through personal communication with

Dr H Blake, who was Director of the Intensive Care Unit of the old Naim Hospital between 1965-70.

RESULTS

The overall incidence of tetanus in the 5 years preceding this survey (1965-70), was 12 per 100,000 population with a fatality rate of up to one third (see Fig I).

Tetanus as can be seen from Figure I is a rare disease in Bahrain which further declined between 1970-86. The incidence fell to less than 2 per 100,000 in 1976 and reached zero mortality from 1982 onwards Fig 2. The age distribution of the cases reported in this study shows that neonates constitute half of all cases, followed in frequency by adults older than 14 years and who accounted for 35.4 percent. Finally the infants and children group (from 4 weeks to 14 years) represents 12.9 percent of all cases (Table I).

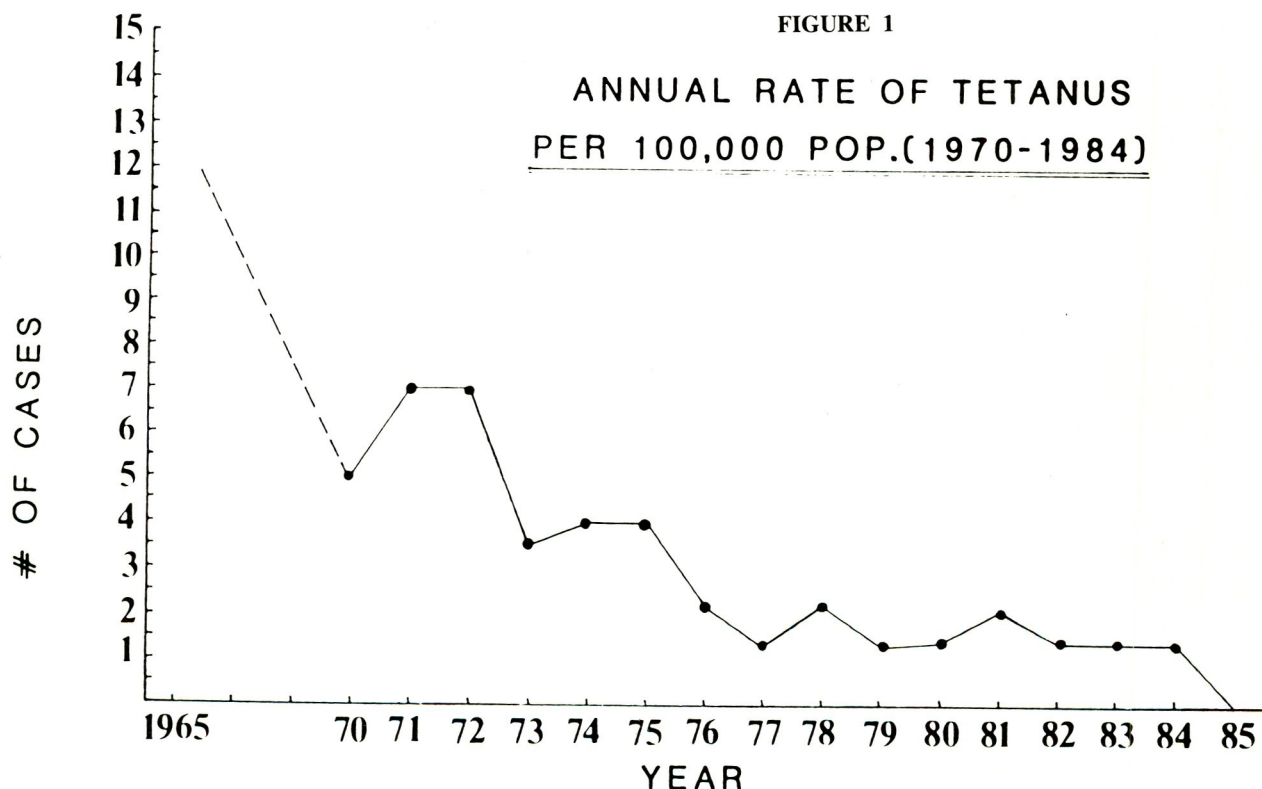


FIGURE 2

TETANUS CASES IN BAHRAIN 1970 - '86
(H.B.E. - HOSP. BASED ENQUIRY)

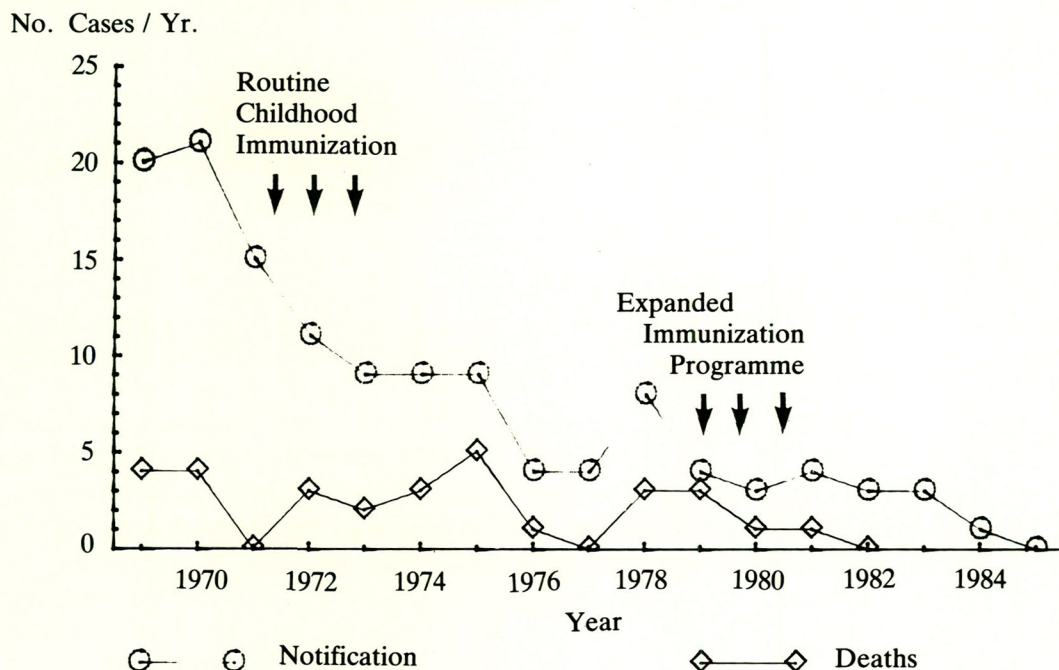


Table 1

**Survey of All Cases of
Tetanus 1970-86**

Neonatal	60		51.7%
Children	15	(8 females and 7 males)	12.9%
Adult	41	(18 females and 23 males)	35.4%
Total	116		100%

In addition to the decline in the incidence of tetanus there had been notable changes in the age and sex distribution of patients.

NEONATAL TETANUS

From 1976 there has been a steady decline in the number of neonatal tetanus cases. Sixty two percent of the cases have been reported between 1970-74, twenty five percent between 1975-79 and the rest from 1980-84. The overall mortality for the first half of the seventies was 18.9 percent (Table 2).