A Study of the Registration of Deaths of Infants and Preschool Children

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Summary

The registration of deaths of 97 infants and 44 pre-school children who died in the area of the Medical Officer of Health, Kopay was studied. The deaths of 64% of the infants and 66% of the pre-school children were not registered by the Registrar of Births and Deaths. Ninety Six of these 141 children died in hospitals and 49% of these deaths were not registered. The reasons for non-registration are discussed, and suggestions for improvement in registration are given.

Introduction

This paper is a by-product of a study undertaken to determine the pattern of mortality among infants and pre-school children. During this study, under-registration of infant and pre-school deaths came up prominently, and this was investigated.

The infant mortality rate (IMR) of a country or region is taken as a good indicator of the socio-economic conditions of that place. The IMR for Jaffna is reported as 18 per 1000 live births,[1] and this figure compares well with that of the developed world. This low rate as compared with the national figure of 35, has been the subject of discussion by several research workers, including Patel[2] recently. The low rate may be due to the well known factors like high literacy rates, high socio-economic status, effective health services etc.; or due to poor registration of deaths. In fact, Rao[3] has suggested a comprehensive study of various aspects of death registration in the districts of Sri Lanka. The IMR in the 24 administrative districts in Sri Lanka range from 18 to 79 per 1000 live births (Table 1).

It was generally felt that these rates, especially those that are low, may be inaccurate. Therefore, during our study on infant deaths we also looked into the accuracy of registration.

Area of study

The study was carried out in the area of MOH Kopay which has a population of 111,649 (estimated for 1982) living in 136 square kilometers. The area is divided into 20 public health midwife (PHM) areas. At present there are only 16 PHMs in the area, four posts being vacant, and the work in these areas is looked after by the adjoining PHMs.

The area of study has a mixed urban and rural population and is representative of the rest of the Jaffna district.

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Table 1

Infant mortality rates by selected districts, 1979[1]

District	Infant mortality rate (per 1000 live births)	Rank (by all 24 districts)
Jaffna	18	1
Mullaitivu	18	1
Polonnaruwa	18	1
Trincomalee	19	4
Anuradhapura	21	5
Galle	38	20
Ratnapura	55	21
Badulla	57	22
Kandy	60	23
Nuwara Eliya	79	24
Sri Lanka	38	–

There is a central dispensary (Kokuvil), a central dispensary and maternity home (Kondavil), a peripheral unit (Atchuvely) and a rural hospital (Kopay), within the area of study. The rural hospital has a medical officer and the other medical institutions have assistant medical practitioners. The Base Hospital, Point Pedro is about 16 kilometers from the northern end of the area of study, and the General Hospital, Jaffna is about 5 kilometers from its southern end. Both these hospitals have paediatricians. The channel of referral from the medical institutions in the area is directly to the Base Hospital, Point Pedro or General Hospital, Jaffna. In addition, the people have access to several western and ayurvedic medical practitioners in the area, and in the adjoining Jaffna town.

Materials and methods

The period of study was one year from 1st June 1982. The public health midwives were requested to notify all deaths of children under 5 years, occurring in their area or in the areas they were looking after. Trained health volunteers assisted them. The deaths in the area were also obtained from registers in the hospitals in the area, General Hospital Jaffna and Base Hospital, Point Pedro. Deaths were also detected by visiting schools (during the 'measles survey') and enquiring from children regarding deaths in their families or neighbourhood. For the purpose of our main study, every notification was investigated by one of the authors by visiting the homes of the deceased.

Five months after the completion of the study, the PHMs were requested to visit again these homes and ascertain whether the deaths were registered. If not registered, the reason for non registration was enquired.

In the case of all hospital deaths, the authors checked the notes or bed head tickets (B.H.T.) of the case, the hospital

death registers, and the records of the registrar of births, and deaths, in order to confirm the registration of deaths.

Results

During the one year period of study, 141 children under 5 years died in the area. 97 (69%) of them were infants, and 44 (31%) were pre-school children (Table 2).

29 (30%) of the infants, and I6 (26.4%) of the pre-school children died at home in spite of the availability of free health care services within a few kilometers from their residences. Of the 141 deaths, 96 (64.5%) remained unregistered at the end of five months after the completion of the study. Of the infants, 64% and of the pre-school children, 66% were not registered (Table 3).

Discussion

In spite of the area of study being provided with free health services, and being in close proximity to a general or base hospital with availability of the services of paediatricians, 30% of the infant deaths and 26.4% of the pre-school deaths have been in the homes.

This study shows that only 36% of the infant deaths have been registered. Half the infant deaths in the hospitals have not been registered and only one out of the 29 infant deaths at home have been registered. Even this single registration was due to the enthusiasm of a public health midwife who notified the death.

The number of births reported by the public health midwives in the areas (including the vacant areas) for 1982, was 2738. The IMR calculated from the 97 infant

Table 2

Deaths of children 0–4 years by place of death

Place of death	Infants (under 1 year)	Preschool children (1–4 years)	Total (0–4 years)
Hospital	68 (70%)	28 (63.6%)	96 (68.1%)
Home	29 (30%)	16 (26.4%)	45 (31.9%)
Total	67 (100%)	44 (100%)	141 (100%)

Table 3

Under registration of deaths of children 0–4 years by place of death

Place of death	Infants (under 1 year)		Preschool children (1–4 years)		Total (0–4 years)	
	Number of deaths	Number not registered	Number of deaths	Number not registered	Number of deaths	Number not registered
Hospital	68	34 (50.0%)	28	13 (46.4%)	96	47 (49.0%)
Home	29	28 (96.6%)	16	16 (100%)	45	44 (97.8%)
Total	97	62 (64.0%)	44	29 (66.0%)	141	96 (64.5%)

deaths is therefore 35.4/1000. It is possible that this figure is also an underestimate as the reporting of deaths from the few PHM areas where there was no permanent PHM has been incomplete. On the basis that only 36% of the infant deaths are being registered, and assuming that the area of study is representative of the Jaffna District, the correct IMR for the Jaffna District should be around 50/1000 live births. Hence the IMR for Jaffna is probably a figure between 35.4 and 50/1000 live births, and not 18 as reported in official statistics.

Out of the 96 children (0 - 4 years) who died in a hospital 81 (84.4%) died at General Hospital, Jaffna. Of these, 36 (44.5%) remained unregistered, 5 months after the study was completed. It is unlikely that the unregistered deaths will be registered in the future, since registration of deaths after 3 months is a tedious procedure, and neither parents nor the hospital authorities are likely to initiate such a course of action.

Of the 45 deaths at home, only one death was regisitered and of the 96 hospital deaths, 49 were registered. The reasons given for non-registration by the parents, whose children died at home are shown in Table 4

The percentage of under registration in hospitals ranged from 40% to 100% (Table 5). It is to be noted that 44.5% of the deaths were not registered even in General Hospital, Jaffna.

The 81 deaths which occurred in General Hospital, Jaffna were followed up retrospectively to determine the points at which there was a failure in the registration of deaths (Table 6). Out of the 81 deaths, the bed head tickets could de traced only in the case of 58. All these B. H. Ts had the cause of death certified by the medical officer. The B. H. Ts of the balance 23 deaths could not be traced. These deaths had not been registered by the registrar of births and deaths. Out of the 58 deaths where a medical officer had certified death, only 55 were entered in the hospital death register. Of these 55, only 45 were finally registered by the registrar of births and deaths, after a minimum of five months since the event occurred.

Table 4

Reasons given by parents for non registration of their children's deaths that occurred at home

Reason	No.
Ignorance that death had to be registered	10
Small child	9
Non possession of food subsidy stamp by the child	5
Lack of domestic help	3
Miscellaneous (mother was a psychiatric patient or investigation by us was considered registration)	5
No reason given	12
Total	44

Table 5

Registration of hospital deaths

Name of hospital	No. of deaths	Unregistered deaths	
		No.	%
General Hospital, Jaffna	81	36	44.5
Base Hospital, Point Pedro	5	2	40.0
Local hospitals	2	2	100.0
Private nursing homes	8	7	87.5
Total	96	47	49.0%

Table 6

Pathways leading to registration and non registration of deaths at General Hospital, Jaffna

(Numbers indicate deaths)

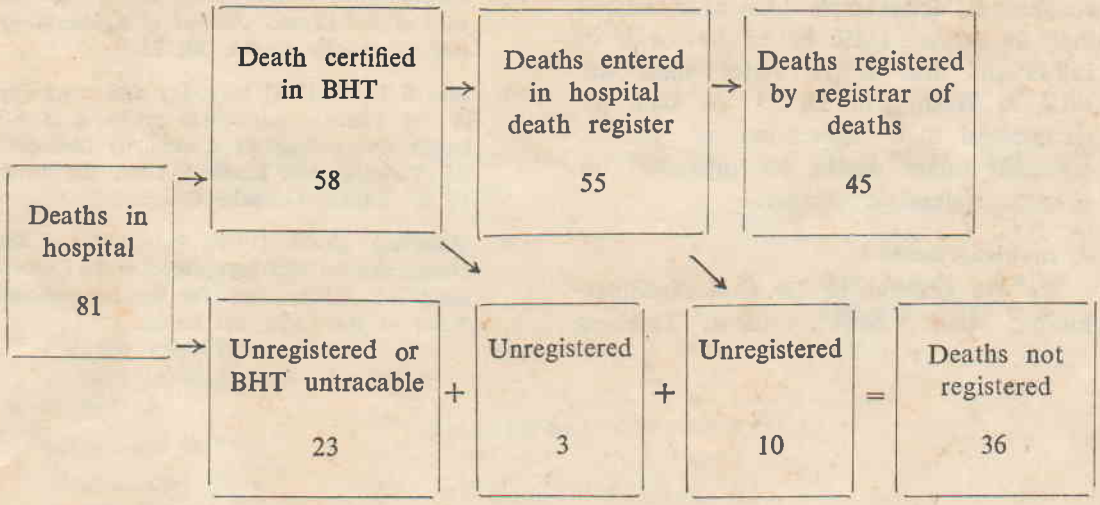

Table 6 shows the points at which registration failed. In the case of 23 deaths (28.4%) the B. H. Ts were not traceable, and therefore it was not possible to ascertain whether death was certified or not. However none of these 23 deaths had been registered by the registrar of deaths.

In a majority (63.9%) of cases of non registration, the B.H.Ts were not traceable. In a considerable number (27.8%) of cases of non registration, the deaths have been entered in the hospital death register but not registered by the registrar of births and deaths. The commonest reason given

is that the diagnosis has not been entered in the death register and this in turn was mainly due to the BHT being misplaced. We feel that the loss or misplacement of the B. H. T, which is due to it being carried from one place to another, plays an important role in the under registration of hospital deaths.

The authors suggest that a form (annex 1) be used whenever a death occurs in the hospital. These forms, in addition to ensuring complete or near complete registration in hospitals will also facilitate any future studies on mortality. The annexed form is being tried out at General Hospital, Jaffna. Registration of vital events form the foundation of a sound vital statistics system, which in turn is the basis for health planning. Research on published data that is inaccurate may not give reliable conclusions; for example it has been claimed that the lowest IMR in Sri Lanka is in Jaffna and that it is better than the IMR in Washington D. C.[4] As such we recommend that registration of deaths, especially infant deaths be organised in a more systematic manner.

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4. Attention please (1979), Publication of the communication strategy project of the Department of Information for the International Year of the Child, Sri Lanka.

Annex 1

REGISTRATION OF DEATHS

Name of Hospital: Serial Number:.....
(Give number entered in C. l)
(To be completed by overseer)

Part A, B and C must be completed before any dead person is removed from the hospital.

PART A.

(To be completed by the nurse in charge of the ward where the death occurred, or by the overseer if he/she was dead on admission).

A.1 Full name of deceased:.....

A.2 Full Address:.....
(To be obtained from next of kin and checked with B. H. T)

A.3 Age: Days/ Months/Years B. H. T. Number:.....

A.4 Sex: Male/Female Ward Number:.....

A.5 Date of death:..... Ward death Register Number:.....

A.6 Time of death:..... a. m/p. m.

.....
(Signature of Nurse/Overseer)

PART B*

(To be completed by the medical officer who attended on the patient or performed the post mortem)

CAUSE OF DEATH I		Approximate interval between onset and death
Disease condition directly leading to death‡	a) ..... due to (or as a consequence of)	.....
Antecedent causes Morbid condition, if any, giving rise to the above cause, stating the underlying condition last.	b) ..... due to (or as a consequence of)	.....
	c)	

* Taken from The International Classification of Diseases Volume 1 1975 Revision. World Health Organization, Geneva (1977).

‡ This does not mean the mode of dying e. g. heart failure, asthenia, etc. It means the disease, injury or complication which caused death.

II **Other significant conditions** contributing to the death but not related to the disease or condition causing it	.....	.....

Diagnosis made (Tick appropriate column) Clinically ☐ Postmortem ☐

....
(Name of medical officer)

....
(Signature of Medical officer)

Designation:.....

Date:..... .....

PART C.

(To be completed by the overseer after entering the particulars in the register

C.1 Death register Number:.....

C.2 Name and address of the person to whom the body was handed over: .....

.....

.....

.....

(Signature of overseer)

PART D.

(To be completed by the Registrar of Births and Deaths and returned to overseer)

D.1 Date Registered:.. ....

D.2 Registration Number:..... .....

.....

(Signature of the Registrar of Births & Deaths)

PART E.

(To be completed by the overseer after making the entries in part D, in the Death Register)

E.1 Date received from the:.....

.....

(Signature of overseer)

PART F.

(To be completed by the R. M. P.)

I have checked parts A to E found them to be completed.

.....

(Signature of R. M. P.)

After completion of parts A to F the forms should be filed in order by the RMP and submitted monthly to the Medical Superintendent, for perusal.

A separate file should be maintained for each year.