



EMRO/SEARO MEETING ON THE PREVENTION OF
NEONATAL TETANUS

Lahore, 22 - 25 February 1982

12 February 1982

RESULTS OBTAINED DURING SPECIAL
SURVEYS ON NEONATAL TETANUS IN
THE EMR COUNTRIES

		<u>No. of tables</u>	<u>No. of figures</u>
Annex I	: EMRO SUMMARY	4	4
Annex II	: PAKISTAN	4	-
Annex III	: SUDAN	3	2
Annex IV	: YEMEN	4	2
Annex V	: DEMOCRATIC YEMEN	3	1
Annex VI	: SYRIAN ARAB REPUBLIC	4	1
Annex VII	: SOMALIA	4	2
Annex VIII A	: ALEXANDRIA	6	1
B	: EGYPT	4	1

OF THE EASTERN MEDITERRANEAN REGION IN 1975 - 1980

(The highest annual incidence is shown)

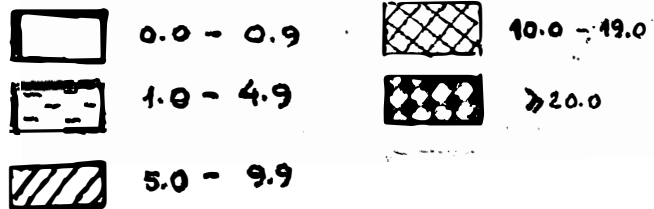
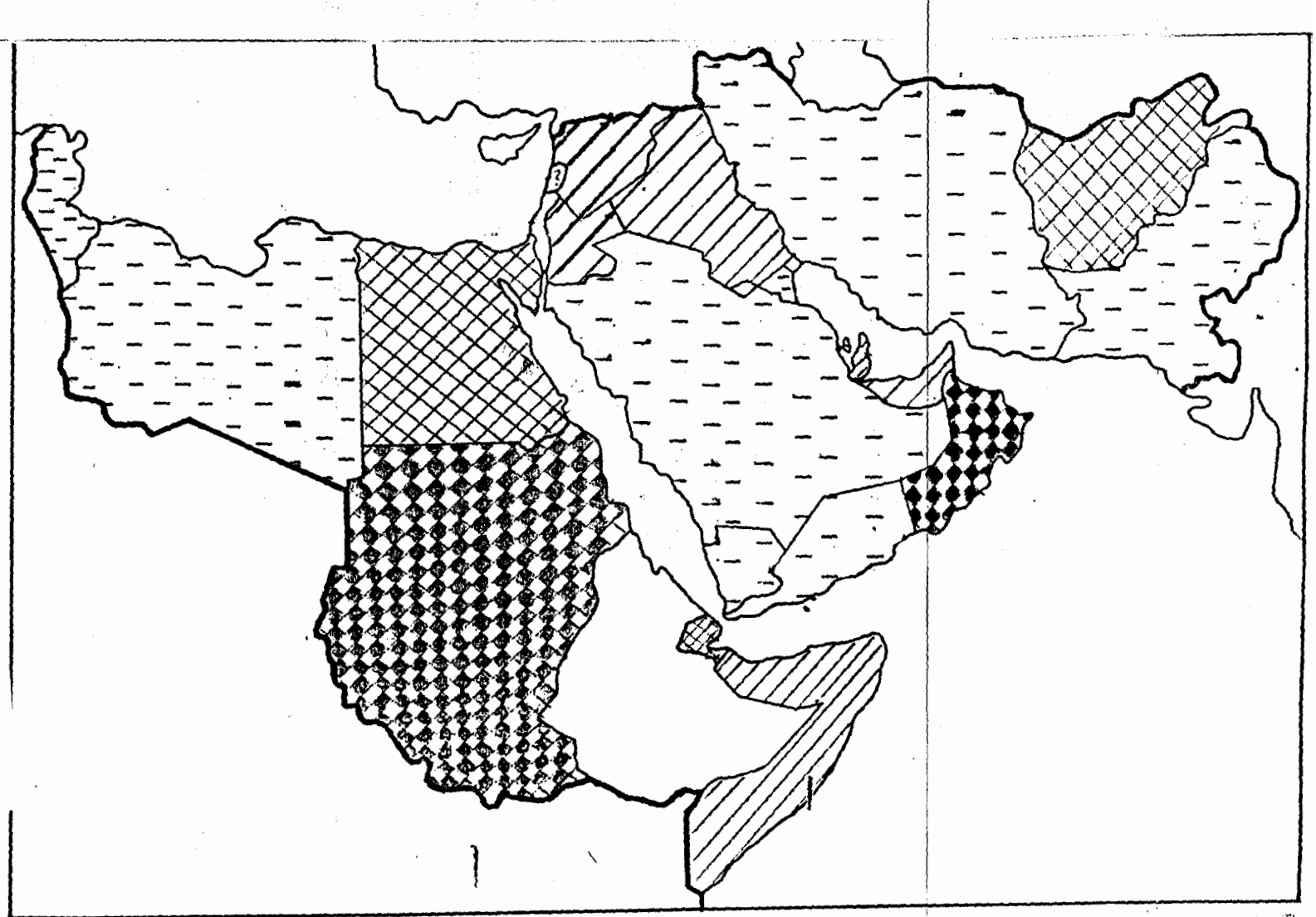


FIGURE 2. AGE AT DEATH IN NEONATAL TETANUS CASES.

NEONATAL TETANUS SURVEYS IN PAKISTAN, SUDAN, ALEXANDRIA AND SOMALIA, 1981

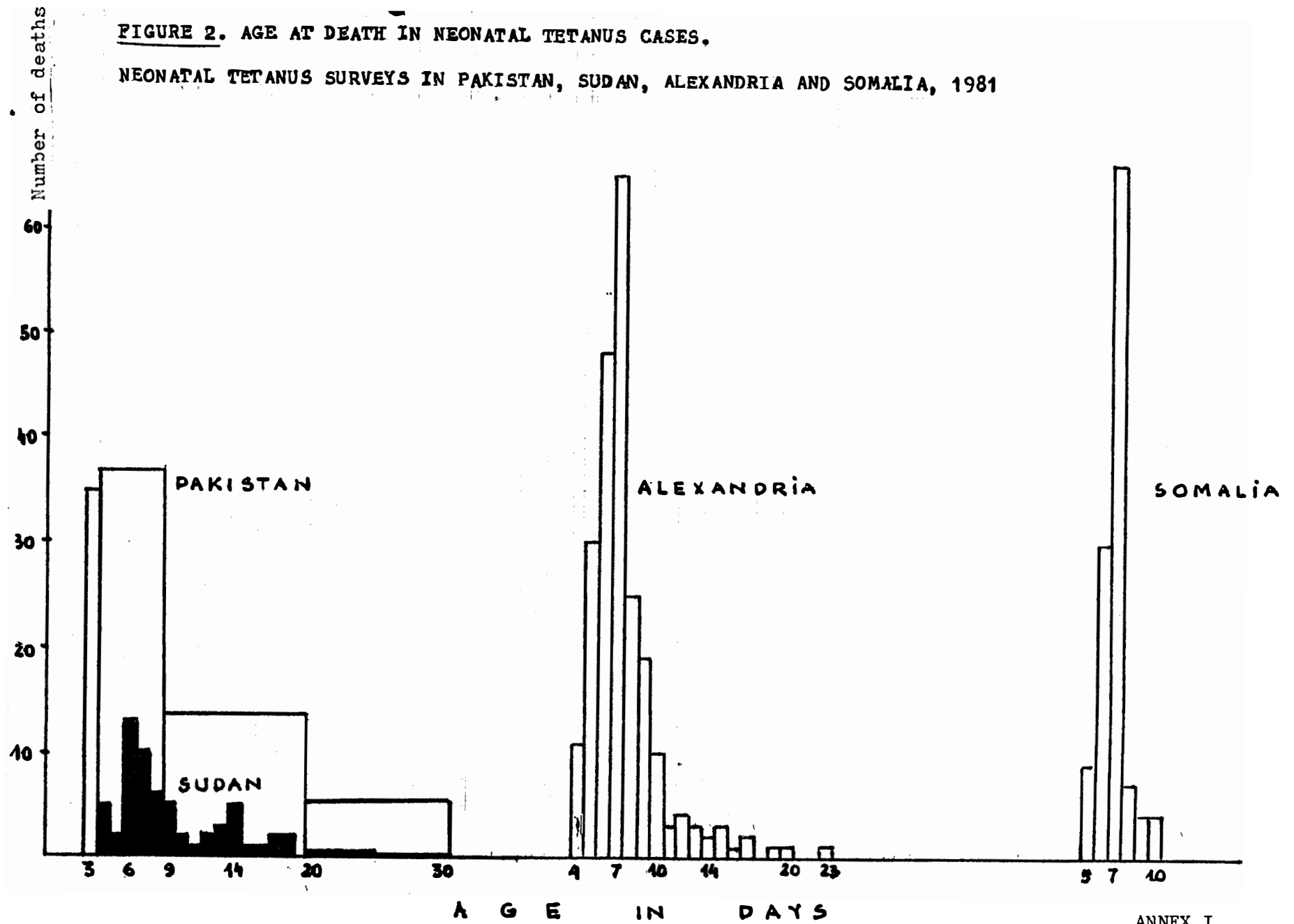


FIGURE 3. AGE AT ONSET AND DEATH DUE TO NEONATAL TETANUS AND AGE AT DEATH DUE TO NEONATAL NON-TETANUS CASES

NEONATAL TETANUS SURVEY, SUDAN, 1981

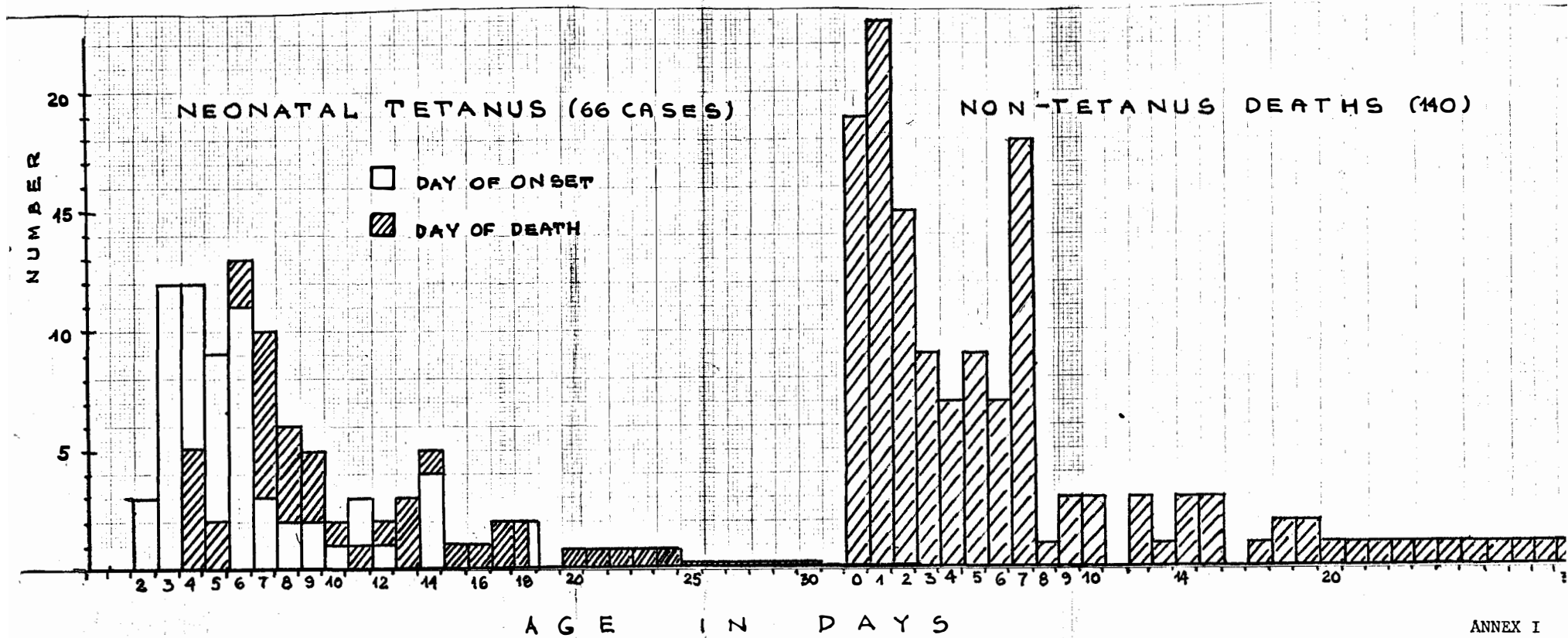
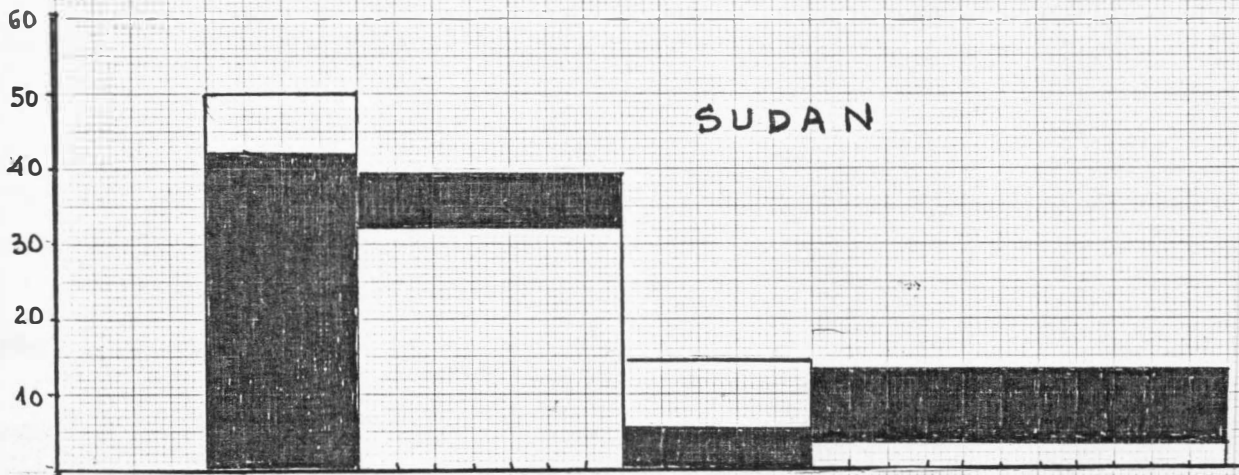


FIGURE 4. NEONATAL TETANUS DEATHS BY AGE AT DEATH AND SEX.

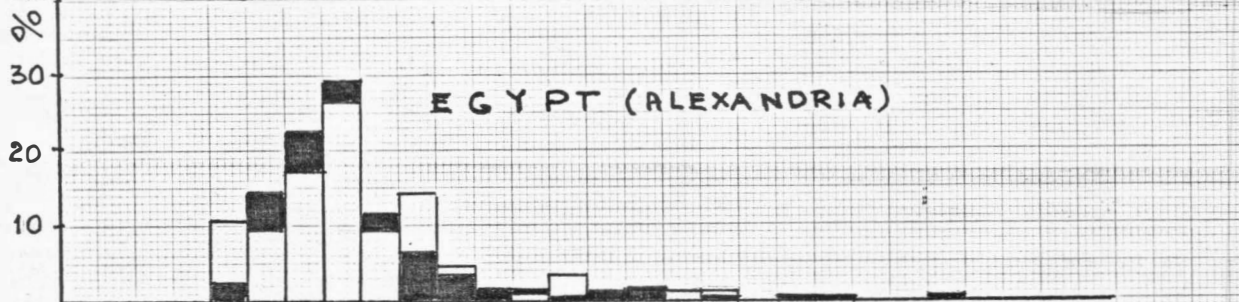
Neonatal tetanus surveys in Pakistan, Yemen Arab Republic and Egypt (Alexandria), 1981.

■ MALES □ FEMALES

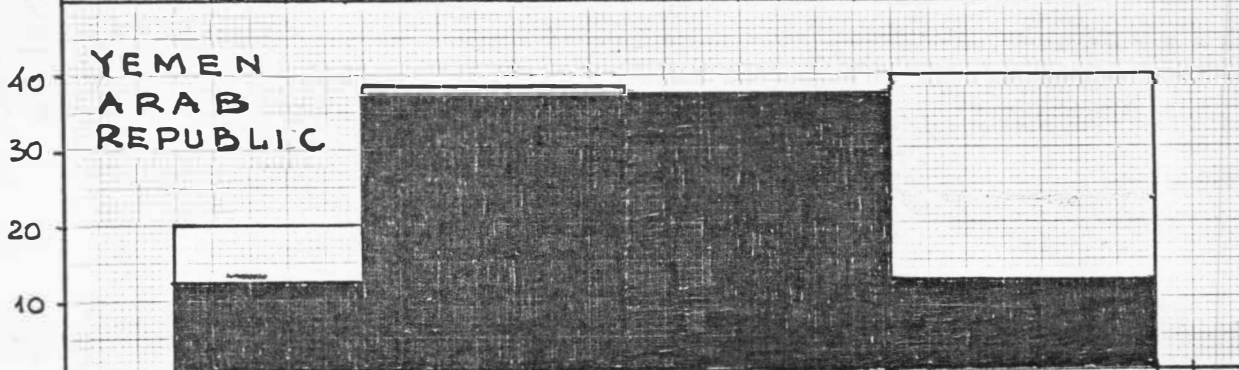
SUDAN



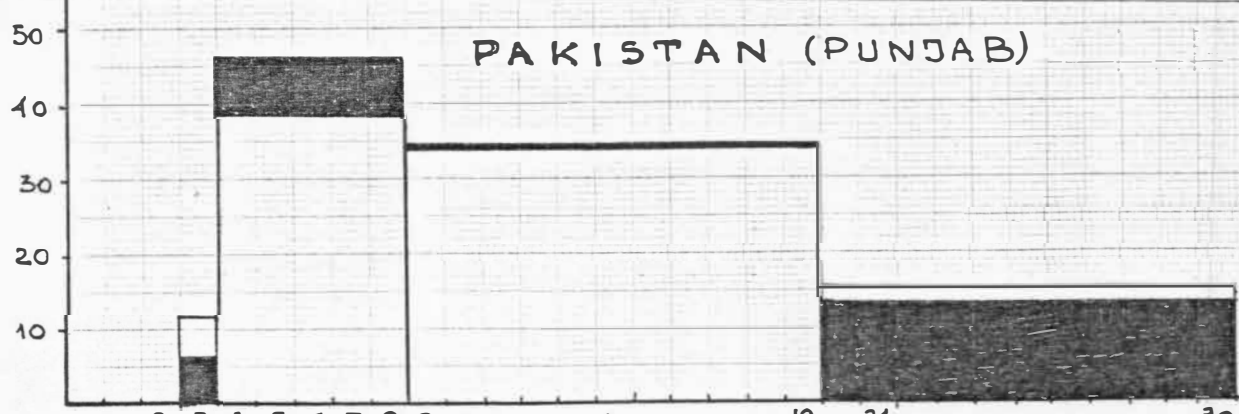
EGYPT (ALEXANDRIA)



YEMEN ARAB REPUBLIC



PAKISTAN (PUNJAB)



AGE IN DAYS

TABLE 1. SPECIAL NEONATAL TETANUS SURVEYS CONDUCTED IN SIX COUNTRIES OF THE EASTERN MEDITERRANEAN REGION IN 1981

NUMBER OF LIVE BIRTHS SURVEYED AND HISTORY OF DELIVERIES

COUNTRY (Area)	NO. OF LIVE BIRTHS SURVEYED			HISTORY OF DELIVERY				
	Urban	Rural	Total	% DELIVERED AT		% DELIVERED BY		
				Health Institution	Home or Field	Qualified Person	Untrained Attendant	Family member or Other
PAKISTAN (PUNJAB)	4.237	9.621	13.858	1.4 ¹⁾	98.1	13.6	76.9	8.1
SUDAN	4.515	5.117	9.632	4.5 ¹⁾	95.5	22.7	48.5	28.8
SOMALIA	-	-	5.781	3.2 ¹⁾	96.0	11.2	57.6	29.6
SYRIAN ARAB REPUBLIC	-	-	6.762	-	-	43.2 ²⁾	56.7	-
YEMEN ARAB REPUBLIC	804	4.387	5.191	3.7 ²⁾	96.3	6.8	93.2	
DEMOCRATIC YEMEN	4.054	2.170	6.224	-	-	-	-	-

- 1) Deliveries of neonatal tetanus deaths
 2) Deliveries of total live births surveyed

TABLE 2. NUMBER OF NEONATAL AND NEONATAL TETANUS DEATHS AND MORTALITY RATES PER 1000 LIVE BIRTHS

RESULTS OF SURVEYS CONDUCTED IN SEVEN COUNTRIES OF THE EASTERN MEDITERRANEAN REGION IN 1981

COUNTRY (Area)	No. of live Births surveyed	NEONATAL DEATHS		NEONATAL TETANUS DEATHS		Proportion of Neonatal Death due to Tetanus (%)
		No. of Deaths	Mortality Rate per 1000 live Births	No. of Deaths	Mortality Rate per 1000 live Births	
PAKISTAN (PUNJAB)	13.858	724	52.2	432	31.2	59.7
SUDAN	9.632	206	29.2	66	8.9	32.0
SOMALIA	5.781	-	-	120	20.8	-
SYRIAN ARAB REPUBLIC	6.762	-	-	33	4.9	-
YEMEN ARAB REPUBLIC	5.191	160	31.7	13	2.6	8.1
DEMOCRATIC YEMEN	6.224	118	19.0	24	3.9	20.3
EGYPT (Alexandria)	-	-	-	228	2.84	-

Table 3. NEONATAL TETANUS DEATHS BY SEX.

RESULTS OF SURVEYS CONDUCTED IN PAKISTAN, YEMEN ARAB REPUBLIC AND
EGYPT (Alexandria) IN 1981.

COUNTRY (Area)	NEONATAL TETANUS DEATHS			Ratio M/F
	Total number	Males	Females	
PAKISTAN (PUNJAB)	432	267	165	1.6
YEMEN ARAB REPUBLIC	13	8	5	1.6
EGYPT (Alexandria)	228	164	64	2.6

ANNEX I

Table 4. ESTIMATED NUMBER OF NEONATAL TETANUS DEATHS IN SEVEN COUNTRIES OF THE EASTERN MEDITERRANEAN REGION ON THE BASIS OF SPECIAL SURVEY RESULTS

COUNTRY	Estimated Number of Live Birth*	Neonatal Tetanus Mortality Rate per 1000 live Birth as found in the Survey	Estimated Number of Neonatal Tetanus Deaths for the whole Country
PAKISTAN	3.515.600	31.2	109.687
SUDAN	823.400	8.9	7.328
SOMALIA	168.000	20.8	3.494
SYRIAN ARAB REPUBLIC	369.600	4.9	1.811
YEMEN ARAB REPUBLIC	278.400	2.6	724
DEMOCRATIC YEMEN	91.200	3.9	356
EGYPT	1.542.800	2.84	4.382

* Population estimates for mid-1979, birth rates according to "1979 World Population Data Sheet of the Population Reference Bureau, Inc." Washington, D.C., USA

ANNEX I

Table 1.

POPULATION, NUMBER OF HOUSES SURVEYED AND NUMBER OF
LIVE BIRTHS ENUMERATED IN THE THREE ECOLOGICAL AREAS

Neonatal Tetanus Survey, Punjab, Pakistan 1981

Ecological Area	Total Population (1000's)	No. of clusters	Total population of clusters*	No. of houses visited	No. of live births enumerated
I. Urban Slums	5.550	42	102.462	18.626	4.237
II. Rural Agricultural	15.232	107	172.072	26.408	6.347
III. Rural cattle/ horse raising	4.097	46	79.415	14.614	3.274
Total	24.879	195	353.949	59.648	13.858

* Population estimated by multiplying No. of houses surveyed by 5.5

ANNEX II

Table 2.

NUMBER OF NEONATAL AND NEONATAL TETANUS DEATHS AND MORTALITY RATES
PER 1000 LIVE BIRTHS IN THREE ECOLOGICAL AREAS

Neonatal Tetanus Survey - Punjab, Pakistan, 1981

Ecological Area	No. of live births	Neonatal Mortality		Neonatal Tet. Mortality		Proportion of neonatal death due to tetanus (%)
		No. of deaths	Rate per 1000 live births	No. of death	Rate per 1000 live births	
I. URBAN SLUMS	4.237	173	40.8	78	18.4	45.1
II. RURAL AGRICULTURAL	6.347	362	57.0	216	34.0	59.7
III. RURAL CATTLE/HORSE RAISING	3.274	189	57.7	138	42.2	73.0
TOTAL	13.858	724	52.2	432	31.2	59.7

Table 3. AGE AT DEATH OF NEONATAL TETANUS CASES AND MORTALITY RATES PER 1000 LIVE BIRTHS BY SEX AND ECOLOGICAL AREAS

Neonatal Tetanus Survey - Punjab, Pakistan, 1981

Ecological Area	Sex	Age at Death (days)				Total Number	Ratio M/F
		3	4-8	9-19	20-30		
I. URBAN SLUMS	M	2	20	20	12	54	2.25
	F	5	7	4	8		
II. RURAL AGRICULTURAL	M	8	55	44	14	121	1.27
	F	12	36	37	10		
III. RURAL CATTLE/HORSE RAISING	M	6	48	29	9	92	2.00
	F	2	21	16	7		
TOTAL	M	16	123	93	35	267	1.62
	F	19	64	57	25		
RATIO M/F	-	0.84	1.92	1.63	1.40	1.62	-

Table 4. HISTORY OF DELIVERY OF NEONATAL TETANUS DEATHS

Neonatal Tetanus Survey - Punjab, Pakistan, 1981

Ecological Area	% Delivered at				% Delivered by					
	Health Institution	House	Field	Not Known	Qualified health person	Trained dai	Untrained dai	Family Member	Others	Not known
I. URBAN SLUMS	5.1	94.9	-	-	10.3	42.3	39.7	1.3	5.1	1.3
II. RURAL AGRICULTURAL	0.9	99.1	-	-	0.9	2.8	94.9	-	0.5	0.9
III. RURAL CATTLE/HORSE RAISING	-	74.6	23.9	1.5	-	7.2	69.6	19.6	1.4	2.2
TOTAL: NUMBER	6	391	33	2	10	49	332	28	7	6
%	1.4	90.5	7.6	0.5	2.3	11.3	76.9	6.5	1.6	1.4

HISTORY OF DELIVERY OF ALL INFANT DEATHS RECORDED BY AREA AND REGION.

NEONATAL TETANUS SURVEY, SUDAN, 1981

DELIVER BY/AT		URBAN			RURAL		
		NORTH (%)	SOUTH (%)	TOTAL (%)	NORTH (%)	SOUTH (%)	TOTAL (%)
TRAINED	Hospital	10.0	30.3	21.6	12.5	4.8	8.5
	Home	56.0	30.3	41.4	47.8	8.3	27.4
UNTRAINED		34.0	39.4	37.0	39.7	86.9	64.1

TABLE 1. - POPULATION AND NUMBER OF LIVE BIRTHS
RECORDED IN VARIOUS AREAS OF THE TWO REGIONS

NEONATAL TETANUS SURVEY, SUDAN, 1981

REGION	AREA	TOTAL POPULATION (IN 000')	POPULATION SURVEYED	NUMBER OF LIVE BIRTHS RECORDED
NORTH	URBAN AND RURAL	490,8	89.436	5.259
SOUTH	URBAN AND RURAL	716.3	51.960	4.373
TOTAL	URBAN	162.0	66.528	4.515
	RURAL	1.045,1	74.868	5.117
	NORTH AND SOUTH	1.207,2	141.396	9.632

ANNEX III

TABLE 2. - NUMBER OF NEONATAL AND NEONATAL TETANUS DEATHS AND MORTALITY RATES PER 1000 LIVE BIRTHS

NEONATAL TETANUS SURVEY, SUDAN 1981

REGION	AREA	NEONATAL MORTALITY		NEONATAL TETANUS MORTALITY		PROPORTION OF NEONATAL DEATHS DUE TO TETANUS (%)
		No. OF DEATHS	RATE PER 1000 LIVE BIRTHS	NO. OF DEATHS	RATE PER 1000 LIVE BIRTHS	
NORTH	URBAN AND RURAL	93	19.4	29	4.9	31.2
SOUTH	URBAN AND RURAL	113	35.4	37	11.6	32.7
TOTAL	URBAN	63	13.9	22	4.9	34.9
	RURAL	143	31.2	44	9.5	30.8
	NORTH AND SOUTH	206	28.9	66	8.9	32.0

ANNEX III

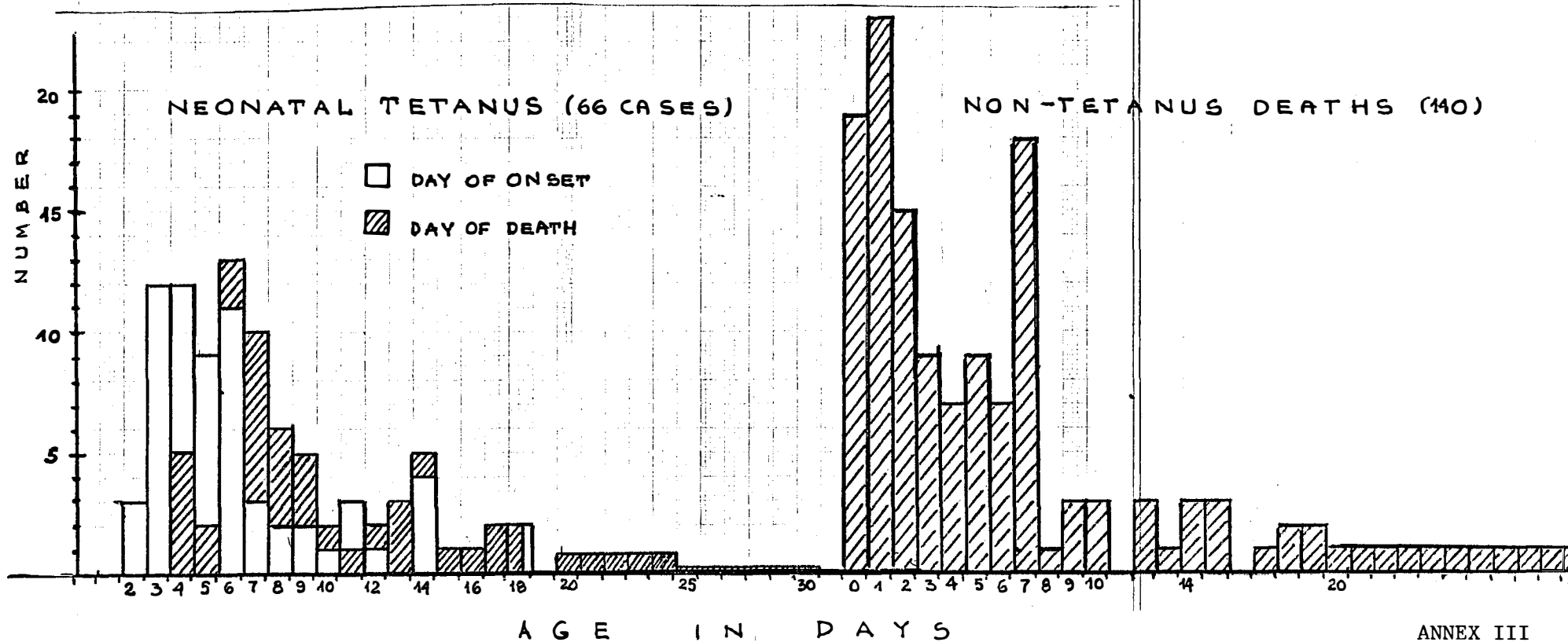
TABLE 3. - HISTORY OF DELIVERY OF NEONATAL TETANUS AND NON-TETANUS DEATHS

NEONATAL TETANUS SURVEY, SUDAN, 1981.

DEATH DUE TO:	TOTAL NO. OF DEATHS	% DELIVERED AT/BY:				
		HOSPITAL BY DOCTOR OR TRAINED MIDWIFE	H O M E B Y :			
			TRAINED MIDWIFE	TBA	RELATIVE	MOTHER HERSELF
TETANUS	66	4.5	18.2	48.5	22.7	6.1
NON-TETANUS	140	13.6	31.4	30.7	24.3	0
TOTAL	206	10.7	27.2	36.4	23.8	1.9

ANNEX III

FIGURE 1. AGE AT ONSET AND DEATH DUE TO NEONATAL TETANUS AND AGE AT DEATH DUE TO NEONATAL NON-TETANUS CASES
 NEONATAL TETANUS SURVEY, SUDAN, 1981



SUDAN



- - · - · International boundary
- - - Provincial boundary
- Rural Council boundary
- Wau Town surveyed
- //// Area surveyed

TABLE I

POPULATION, NUMBER OF HOUSEHOLDS SURVEYED AND NUMBER
OF LIVE BIRTHS ENUMERATED IN THE THREE REGIONS

NEONATAL TETANUS SURVEY, YEMEN ARAB REPUBLIC, 1981

REGION	1975' CENSUS POPULATION (1000's)	NO. OF HOUSEHOLDS SURVEYED	NO.OF LIVE BIRTHS ENUMERATED	<u>HOUSEHOLDS</u> BIRTH
I	2026	6.735	2.333	2.87
II	1642	5.514	1.823	3.02
III	756	2.542	1.035	2.46
TOTAL	4424	14.791	5.191	2.85

ANNEX IV

TABLE II

NUMBER OF NEONATAL AND NEONATAL TETANUS DEATHS AND MORTALITY
RATES PER 1.000 LIVE BIRTHS, BY REGIONS

NEONATAL TTTANUS SURVEY. YEMEN ARAB REPUBLIC; 1981

REGION	NO.OF LIVE B I R T H S	NEONATAL MORTALITY		NEONATAL TETANUS MORTALITY		PROPORTION NEONATAL DEATH DUE TO TETANUS (%)
		NO.OF DEATHS	RATE PER 1000 LIVE BIRTHS *	NO.OF DEATHS	RATE PER 1000 LIVE BIRTHS *	
I	2.333	79	34.8	5	2.2	6.3
II	1.823	51	28.8	3	1.7	5.9
III	1.035	30	29.8	5	5.0	16.7
TOTAL	5.191	160	31.7	13	2.6	8.1

ANNEX IV

* Crude rates multiplied by 1.028 to arrive at a 52 - week denominator

TABLE 111

NUMBER OF INFANT, NEONATAL AND NEONATAL TETANUS DEATHS
AND NEONATAL MORTALITY RATES PER 1000 LIVE BIRTHS, BY REGION AND SEX

NEONATAL TETANUS SURVEY, YEMEN ARAB REPUBLIC, 1981

REGION	SEX	INFANT DEATHS		NEONATAL MORTALITY			NEONATAL TETANUS MORTALITY		
		NO.	RATIO M/F	NO.	RATE 1000 LIVE BIR- THS*	RATIO M/F MORTALITY	NO.	RATE PER 1000 LIVE BIRTHS *	RATIO M/F MORTALITY
I	M	96	1.45	51	43.3	1.69	2	.	.
	F	66		28	25.6		3	.	
II	M	59	1.69	32	34.3	1.52	3	.	.
	F	35		19	22.6		0	.	
III	M	45	1.25	20	37.3	1.76	3	.	.
	F	36		10	21.2		2	.	
TOTAL	M	200	1.46	103	38.9	1.64	8	3.0	1.43
	F	137		57	23.7		5	2.1	

* Crude rates were multiplied by 1.028 to arrive at a 52 - week denominator

ANNEX IV

TABLE IV

PERCENTAGE OF DELIVERIES CONDUCTED AT HOME, AND AT
HEALTH FACILITIES BY TRAINED AND UNTRAINED PERSONS
BY REGION, AND BY RURAL AND URBAN AREAS

NEONATAL TETANUS SURVEY, YEMEN ARAB REPUBLIC, 1981

REGION	AREA	DELIVERED AT/BY:		
		GOVERNMENT HEALTH FACILITY	HOME BY FORMALLY TRAINED PERSON	HOME BY TRADITIONAL MIDWIFE, FAMILY MEM- BER OR SELF
I	RURAL	3.1	0.3	96.6
	URBAN	15.5	3.9	80.6
II	RURAL	2.4	3.6	94.0
	URBAN	9.1	27.4	63.5
III	RURAL	0.9	1.2	97.9
	URBAN	4.2	5.0	90.8
TOTAL		3.7	3.1	93.2

ANNEX IV

FIGURE 1. NEONATAL TETANUS AND NON-TETANUS DEATHS BY SEX
 AND AGE AT DEATH IN WEEKS
 NEONATAL TETANUS SURVEY, YEMEN ARAB REPUBLIC, 1981

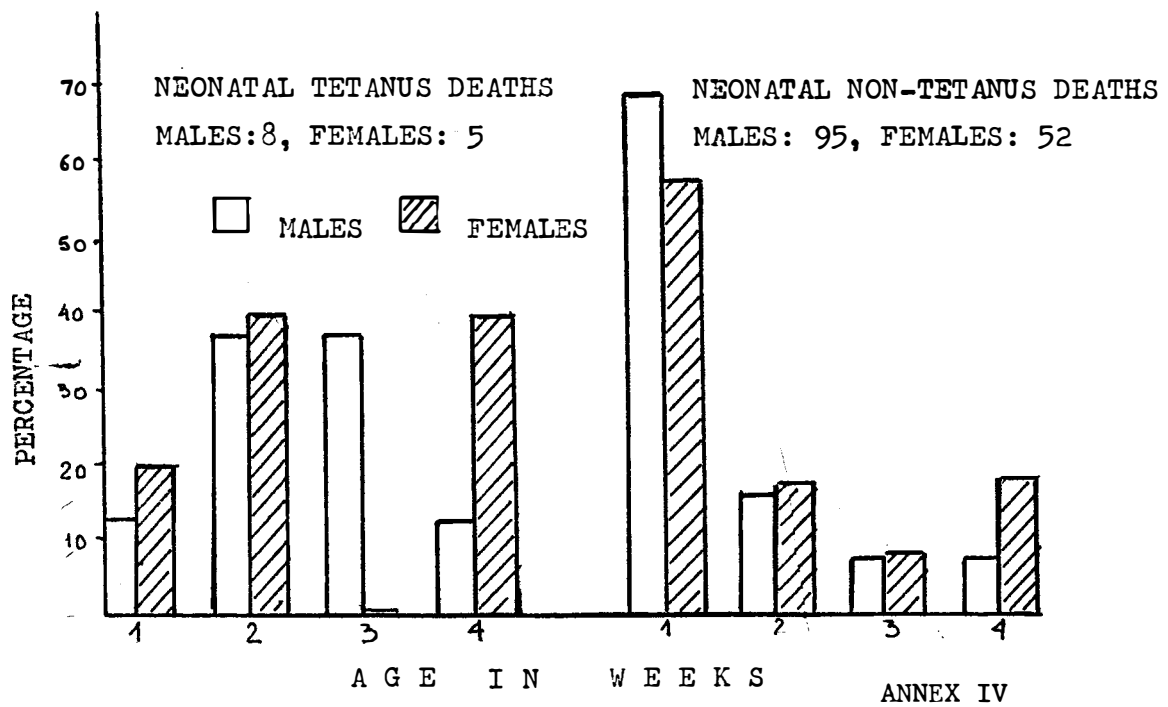
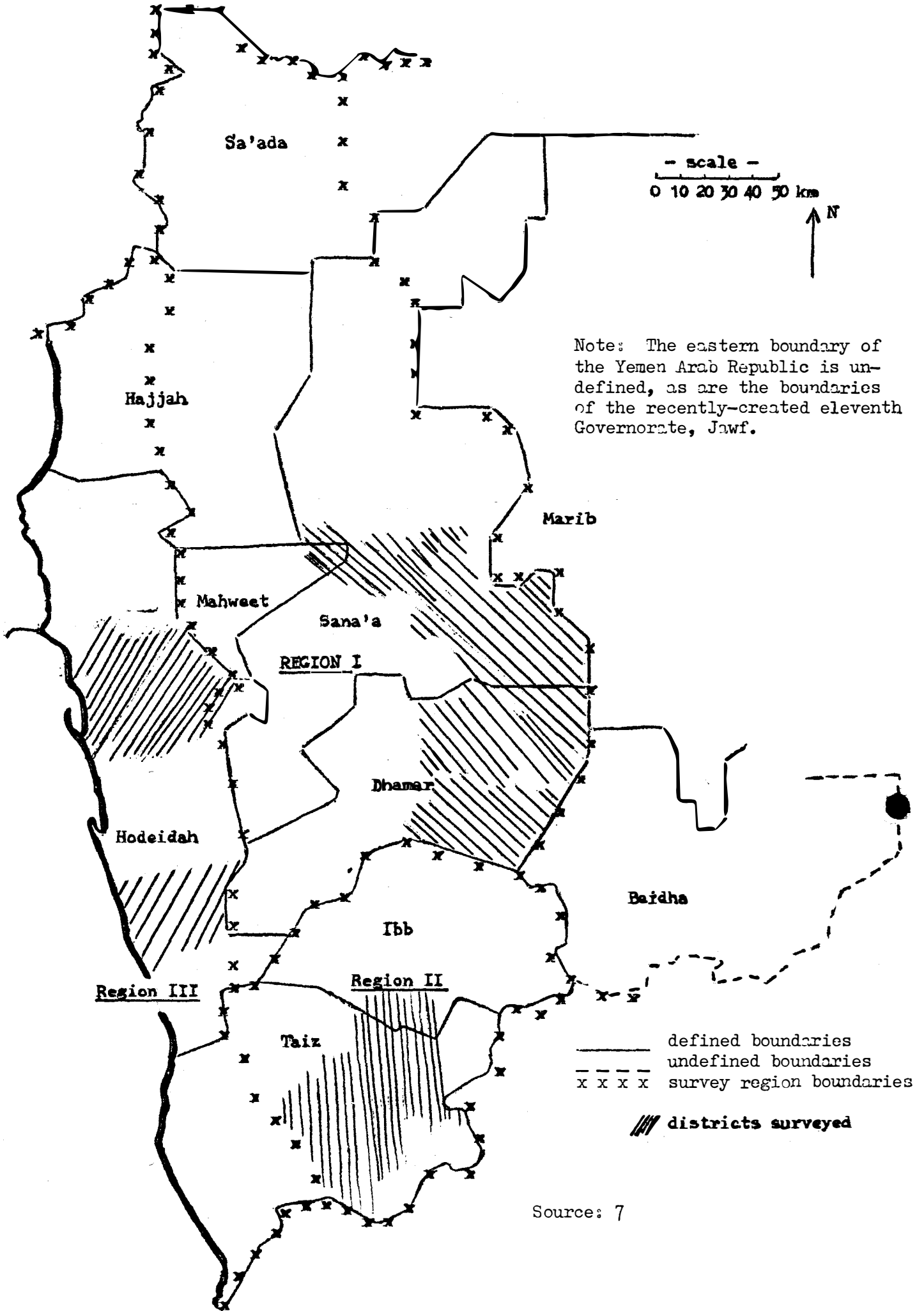


Figure 1: Map of the Yemen Arab Republic Showing Governorates, Survey Regions and Districts Surveyed



Source: 7

TABLE 1 - ESTIMATED STUDY POPULATION, NUMBER OF VISITED FAMILIES AND
ENUMERATED LIVE BIRTHS

NEONATAL TETANUS SURVEY, PEOPLE'S DEMOCRATIC REPUBLIC OF YEMEN, 1981

Governorate	No. of visited families	Estimated study population	No. of live births enumerated
Aden	14.716	97.126	3.584
Lahej	4.201	43.492	1.528
Abyan	1.323		457
Shabwa	408		131
Hadramout	1.580		524
TOTAL	22.228	140.618	6.224

ANNEX V

TABLE 2 - NUMBER OF INFANT, NEONATAL AND NEONATAL TETANUS DEATHS
AND MORTALITY RATES PER 1000 LIVE BIRTHS

NEONATAL TETANUS SURVEY, PEOPLE'S DEMOCRATIC REPUBLIC OF YEMEN, 1981

Governorate	No. of live births	No. of infant deaths	Neonatal mortality		Neonatal tetanus mortality		Proportion of neonatal deaths due to tetanus(%)
			No. of deaths	Rate per 1000 live births	No. of deaths	Rate per 1000 live births	
Aden	3.584	147	39	10.9	11	3.1	28.2
Lahej, Abyan, Shabwa, Hadramount	2.640	178	79	29.9	13	4.9	16.5
TOTAL	6.224	325	118	19.0	24	3.9	20.3

ANNEX V

TABLE 3 - NEONATAL TETANUS MORTALITY FOUND IN VARIOUS ECOLOGICAL AREAS

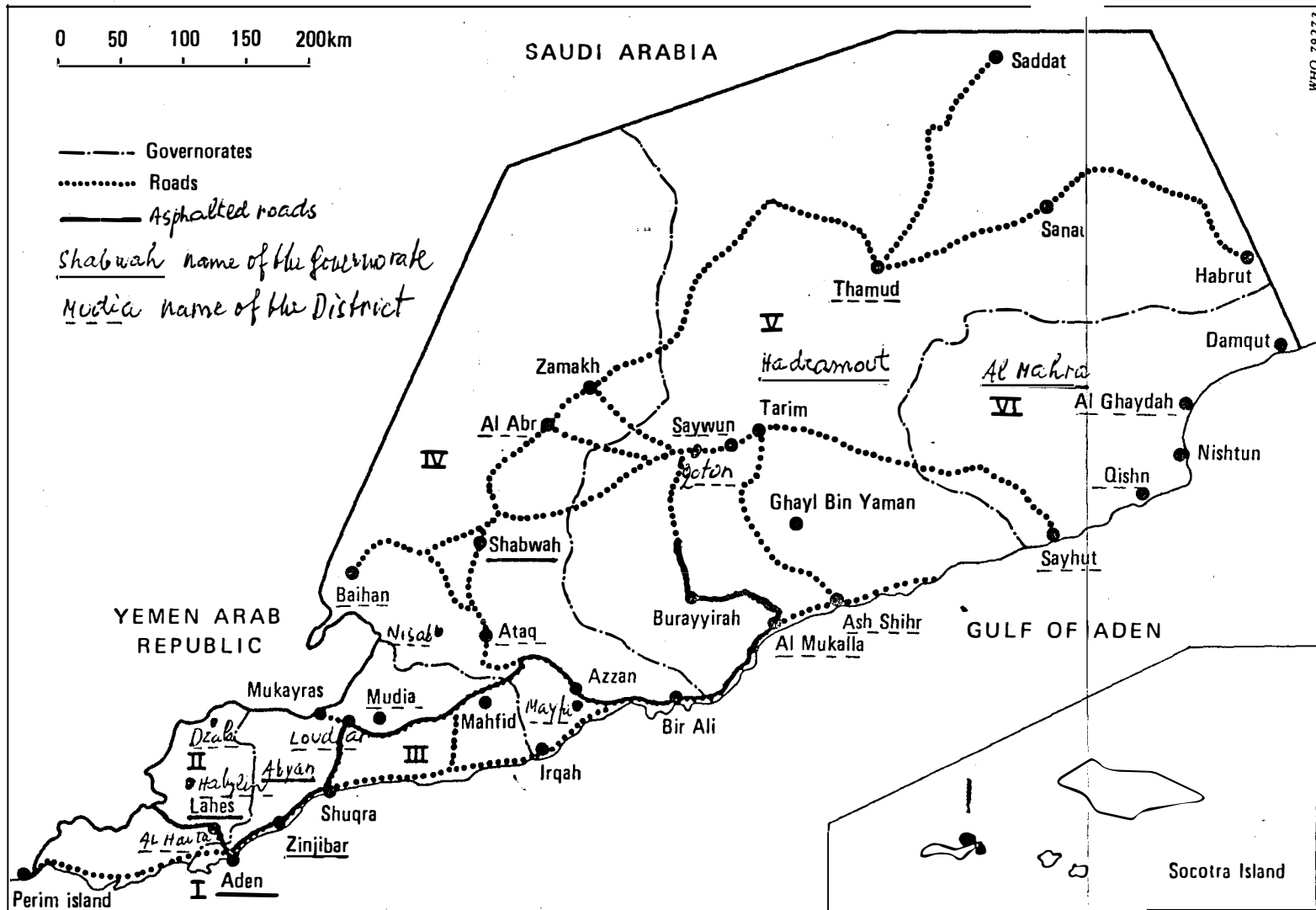
NEONATAL TETANUS SURVEY, PEOPLE'S DEMOCRATIC REPUBLIC OF YEMEN, 1981

Area Surveyed	No. of live births enumerated	Neonatal tetanus mortality	
		No. of deaths	Rate per 100 live births
Town areas with solid or mud houses	3.004	4	1.3
Town areas - slums	1.050	6	5.7
Villages	2.170	14	6.6
TOTAL	6.224	24	3.9

ANNEX V

PEOPLE'S DEMOCRATIC REPUBLIC OF YEMEN
 MAIN TOWNS AND ROADS

ANNEX V



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TABLE I

HOSPITALIZED AND NOTIFIED NUMBER OF
TETANUS CASES*, SYRIAN ARAB REPUBLIC
1975 - 1980

Y E A R	NO. OF HOSPITALIZED CASES	NO. OF NOTIFIED CASES
1975	174	67
1976	278	120
1977	287	145
1978	326	251
1979	445	248
1980	244	88

* Annual Statistical Reports

ANNEX VI

TABLE II

POPULATION, NUMBER OF HOUSEHOLDS VISITED AND NUMBER
OF LIVE BIRTHS ENUMERATED IN FIVE PROVINCES SURVEYED

NEONATAL TETANUS SURVEY, SYRIAN ARAB REPUBLIC, 1981

MOHAFAZAT (PROVINCE)	TOTAL POPULATION (1000')	ESTIMATED STUDY POPULATION	NO. OF HOUSEHOLDS VISITED	NO. OF LIVE BIRTHS ENUMERATED
HASAKEH	660	39.383	5.251	1.628
DAMASCUS	744	31.542	5.257	1.824
SWEIDA	192	31.494	5.249	881
HOMS	789	29.604	5.253	1.417
TARTOUS	431	31.337	5.235	1.012
TOTAL	2.816	163.360	26.245	6.762

ANNEX VI

TABLE III

NUMBER OF NEONATAL TETANUS CASES, NEONATAL TETANUS DEATHS AND INCIDENCE
AND MORTALITY RATES PER 1000 LIVE BIRTHS IN FIVE PROVINCES SURVEYED

NEONATAL TETANUS SURVEY, SYRIAN ARAB REPUBLIC, 1981

MOHAFAZAT (PROVINCE)	NO.OF LIVE BIRTHS ENUMERATED	NEONATAL TETANUS CASES		NEONATAL TETANUS DEATHS		
		NO. OF CASES	RATE PER 1000 LIVE BIRTHS	NO. OF DEATHS	RATE PER 1000 LIVE BIRTHS	CASE FATALITY RATE (%)
HASAKEH	1.628	13	8.0	11	6.8	85
DAMASCUS	1.824	22	12.1	13	7.1	59
SWEIDA	881	1	1.1	1	1.1	100
HOMS	1.417	12	8.5	8	5.6	67
TARTOUS	1.012	0	-	0	-	-
TOTAL	6.762	48	7.1	33	4.9	69

TABLE IV

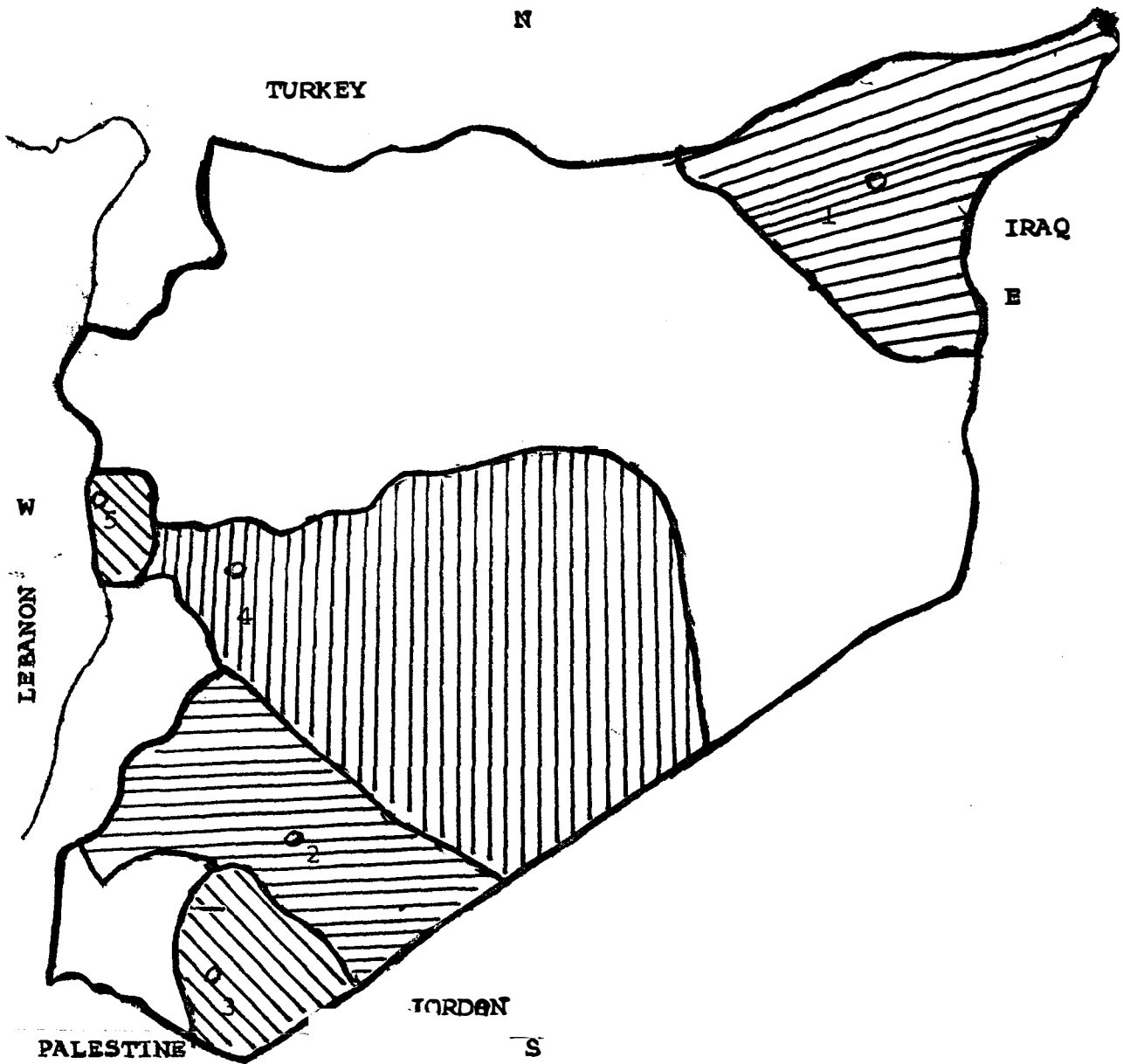
HISTORY OF DELIVERY OF THE LIVE BIRTHS SURVEYED
& NEONATAL TETANUS CASES FOUND IN FIVE PROVINCES

NEONATAL TETANUS SURVEY, SYRIAN ARAB REPUBLIC
1981

MOHAFAZAT (PROVINCE)	% LIVE BIRTHS DELIVERED BY				% NEONATAL TETANUS CASES DELIVERED BY TBA
	TBA	MIDWIFE	DOCTOR	HOSPITAL	
HASAKEH	76.6	17.5	3.6	2.3	84.6
DAMASCUS	44.0	32.0	3.0	20.9	36.4
SWEIDA	68.4	21.5	1.6	8.5	100
HOMS	55.3	29.1	4.9	10.7	58.3
TARTOUS	39.2	46.0	4.1	10.7	-
TOTAL	56.7	28.6	3.5	11.1	56.3

SYRIAN ARAB REPUBLIC

ANNEX VI



NEO-NATAL TETANUS SURVEY, OCT - NOV. 1981.

1. HASAKEH
2. DAMASCUS MOHAFAZAT
3. SOUEIDA
4. HOMS
5. TARTOUS

Table 1. NUMBER OF HOUSEHOLD VISITED AND NUMBER OF
LIVE BIRTHS ENUMERATED, BY REGIONS
Neonatal Tetanus Survey - Somalia, 1981

REGION	No. of Household visited	No. of live births enumerated	Household birth
BANADIR	19.389	1.720	11.3
BAY	12.978	1.417	9.1
LOWER SHABELLI	13.129	1.861	7.1
MIDDLE SHABELLI	4.728	783	6.0
TOTAL	50.224	5.781	8.7

ANNEX VII

Table 2. NUMBER OF NEONATAL AND NEONATAL TETANUS DEATHS AND MORTALITY RATES PER 1000 LIVE BIRTHS, BY REGIONS

Neonatal Tetanus Survey, Somalia, 1981

REGION	No. of Live Birth	Neonatal Mortality		Neonatal Tet.Mortality		Proportion of Neonatal Deaths due to Tetanus (%)
		No. of Deaths	Rate per 1000 live Births	No.of Deaths	Rate per 1000 live Births	
BANADIR	1.720	104	60.5	8	4.7	7.7
BAY	1.417	134	94.6	6	4.2	4.5
LOWER SHABELLI	1.861	167	89.7	68	36.5	40.7
MIDDLE SHABELLI	783	120	153.3	38	48.5	31.7
TOTAL	5.781	525	90.8	120	20.8	22.9

ANNEX VII

Table 3. HISTORY OF DELIVERY OF NEONATAL TETANUS DEATHS, BY REGION

Neonatal Tetanus Survey, Somalia, 1981

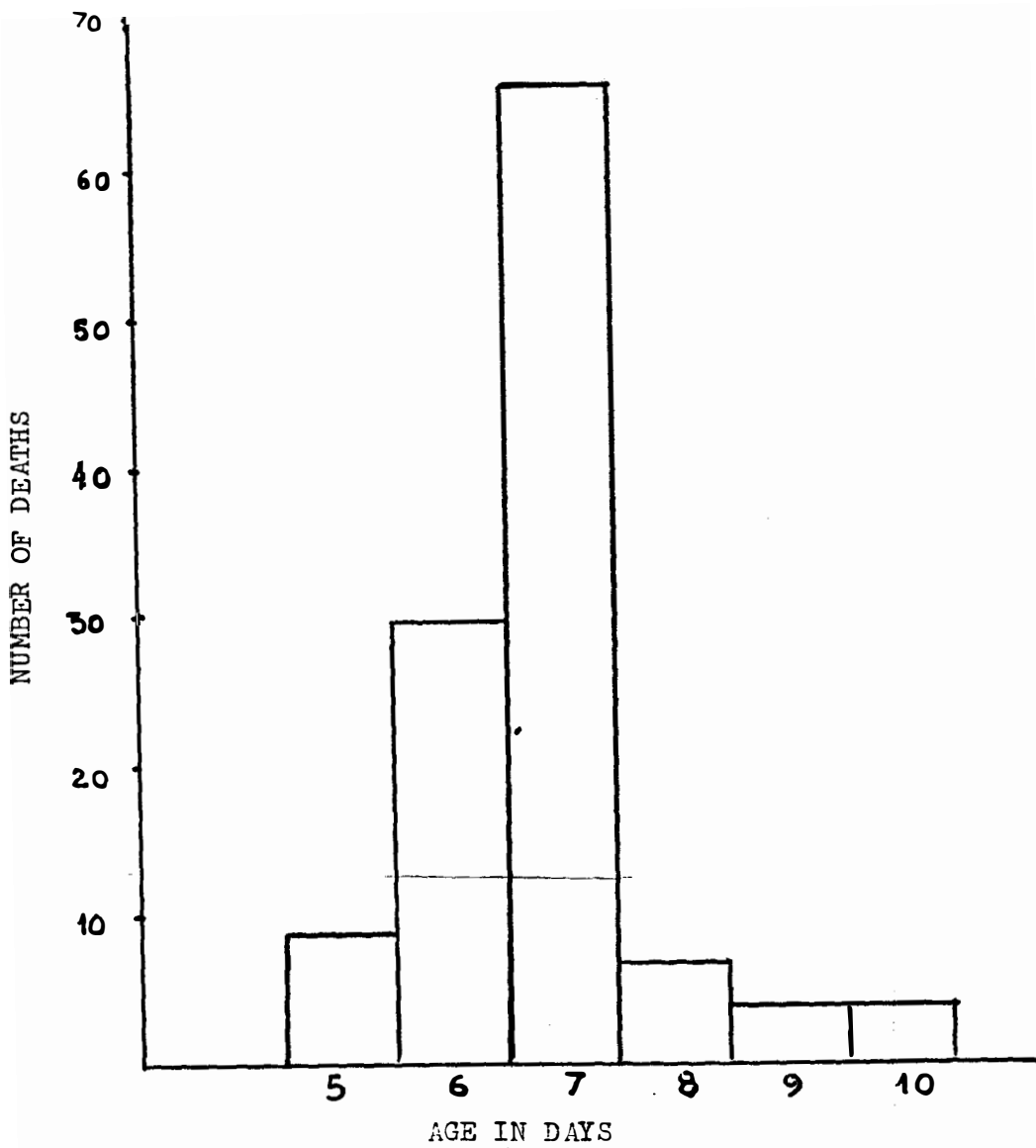
REGION	% Delivered at				% Delivered by			
	Hospital	Home	Other Places	Not Known	Midwife	TBA	Other	Not Known
BANADIR	12.5	87.5	0	0	25.0	62.5	12.5	0
BAY	0	83.3	16.7	0	0	83.3	16.7	0
LOWER SHABELLI	44	91.2	2.9	1.5	8.8	52.9	35.3	2.9
MIDDLE SHABELLI	0	100	0	0	15.8	65.8	18.4	0
TOTAL	3.3	93.4	2.5	0.8	11.7	59.1	27.5	1.7

ANNEX VII

Table 4. IMMUNIZATION STATUS OF MOTHERS WHOSE CHILDREN DIED
FROM NEONATAL TETANUS
NEONATAL TETANUS SURVEY - Somalia, 1981

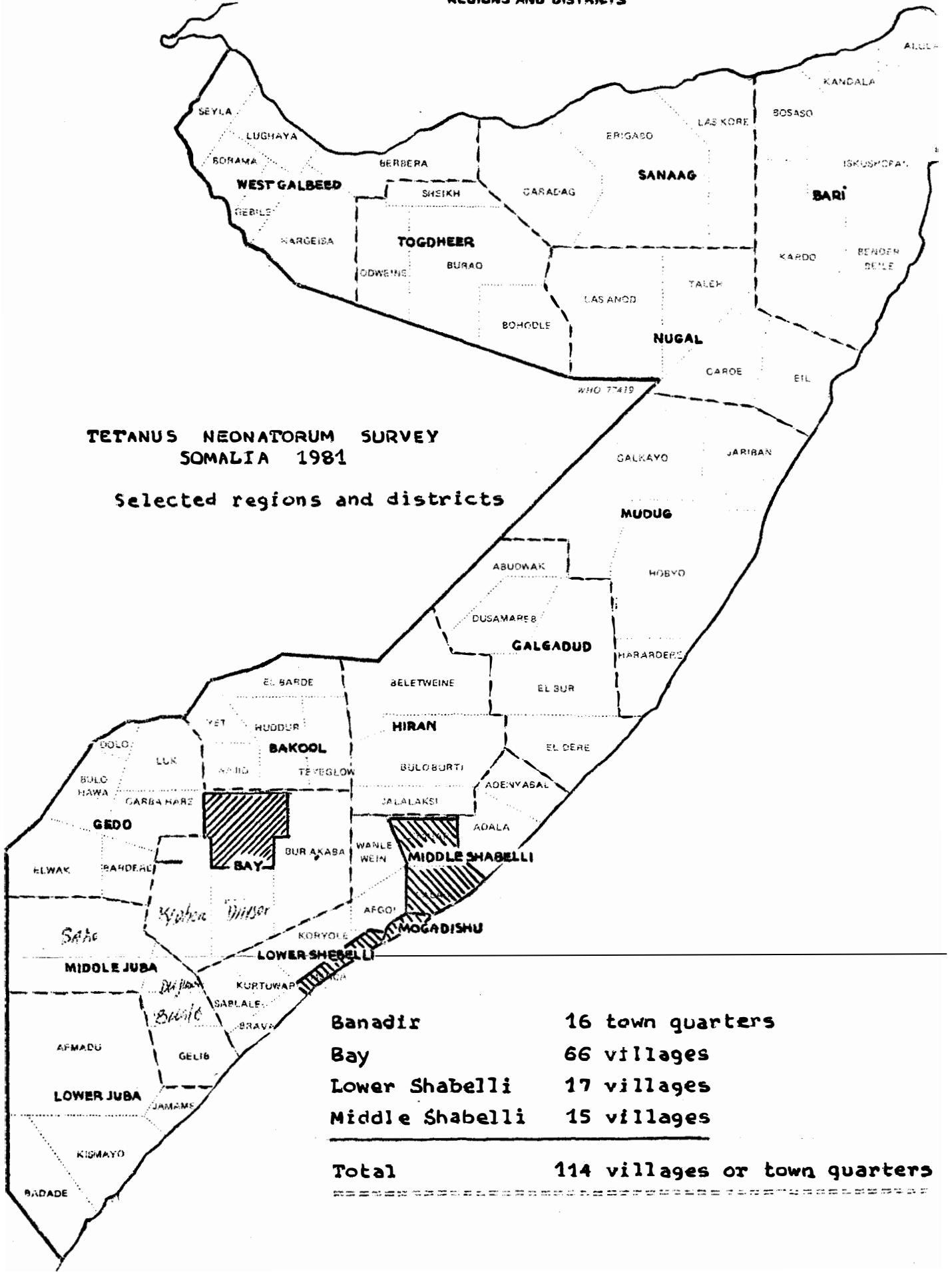
REGION	Number of Neonatal Tetanus Deaths	Immunization Status of Mothers (Numbers)			
		Not Immunized	Immunized with		
			100 SE	200 SE	300 SE
BANADIR	8	7	0	1	0
BAY	6	6	0	0	0
LOWER SHABELLI	68	47	14	4	3
MIDDLE SHABELLI	38	27	8	3	0
TOTAL	120	87	22	8	3

FIGURE 1. NEONATAL TETANUS DEATHS BY AGE
NEONATAL TETANUS SURVEY, SOMALIA, 1981



SOMALI DEMOCRATIC REPUBLIC
REGIONS AND DISTRICTS

ANNEX VII



TETANUS NEONATORUM SURVEY
SOMALIA 1981

Selected regions and districts

Banadir	16 town quarters
Bay	66 villages
Lower Shabelli	17 villages
Middle Shabelli	15 villages
Total	114 villages or town quarters

TABLE 1

NUMBER OF CASES OF TETANUS NEONATORUM IN RELATION
TO 1000 BIRTHS IN ALEXANDRIA (1975-1980)

Year	Number of cases	Number of live births	Rate/1000 births
1975	173	67933	2.55
1976	203	70012	2.90
1977	189	74672	2.53
1978	249	75554	3.30
1979	293	80769	3.63
1980	260+	80407	3.23

± In addition 15 cases were admitted to other hospitals and an additional eighteen deaths identified through the active case finding survey.

ANNEX VIII A

TABLE 2

DISTRIBUTION OF TETANUS NEONATORUM BY MONTH OF OCCURRENCE
(ALEXANDRIA 1980)

Month	Number of cases	Number of live births	Incidence rate/ 1000 live births
January	17	8259	2.07
February	27	6516	2.14
March	22	6787	3.24
First quarter	66	21562	3.06
April	20	5829	3.43
May	12	5655	2.12
June	22	5807	3.79
Second quarter	54	17291	3.12
July	27	6768	3.99
August	26	6807	3.82
September	25	7645	3.27
Third quarter	78	21220	3.68
October	35	6592	5.31
November	25	7314	3.42
December	35	6428	5.44
Fourth quarter	95	20334	4.67
TOTAL	293	80407	3.64

TABLE 3

ATTACK RATE OF TETANUS NEONATORUM PER 1000 LIVE BIRTHS BY
DISTRICT (ALEXANDRIA 1980)

District	Number of births	Number of cases	Attack rate/1000
East	29051	106	3.64
Central	24762	61	2.46
West	10219	39	3.82
Amreya	16375	87	5.31
Total	80407	293	3.64

TABLE 4

ATTACK RATE OF TETANUS NEONATORUM PER 1000 LIVE BIRTHS BY
URBANIZATION (ALEXANDRIA 1980)

	Number of births	Number of cases	Attack rate/1000 live births
Urban	71047	223	3.14
Rural	9360	70	7.48
Total	80407	293	3.64

ANNEX VIII

TABLE 5

DISTRIBUTION OF MORBIDITY AND MORTALITY DATA OF TETANUS
NEONATORUM BY SEX (ALEXANDRIA 1980)

	No. of live births	Morbidity		Mortality		Case fatality rate (%)
		No.	Incidence rate/ 1000 L.B.	No.	Death rate per 1000 L.B.‡	
Males	40167	209	5.20	164	4.08	78.5
Females	40240	84	2.09	64	1.59	76.2
Total	80407	293	3.64	228	2.84	77.8

ANNEX VIII

‡ L.B. Live births.

TABLE 6

DISTRIBUTION OF MORBIDITY AND MORTALITY DATA OF TETANUS
NEONATORUM BY INCUBATION PERIOD (ALEXANDRIA 1980)

Incubation period (in days)	Cases		Deaths No.	Case fatality rate (%)
	No.	Percent		
3-6	177	60.4	158	89.3
7-13	89	30.4	61	68.5
14-20	22	7.5	8	36.4
21-23	5	1.7	1	20.0
Total	293	100.0	228	77.8

ANNEX VIII

Fig. 1 NEONATAL TETANUS DEATHS BY AGE IN DAYS AND SEX

ALEXANDRIA, 1980

ANNEX VIII

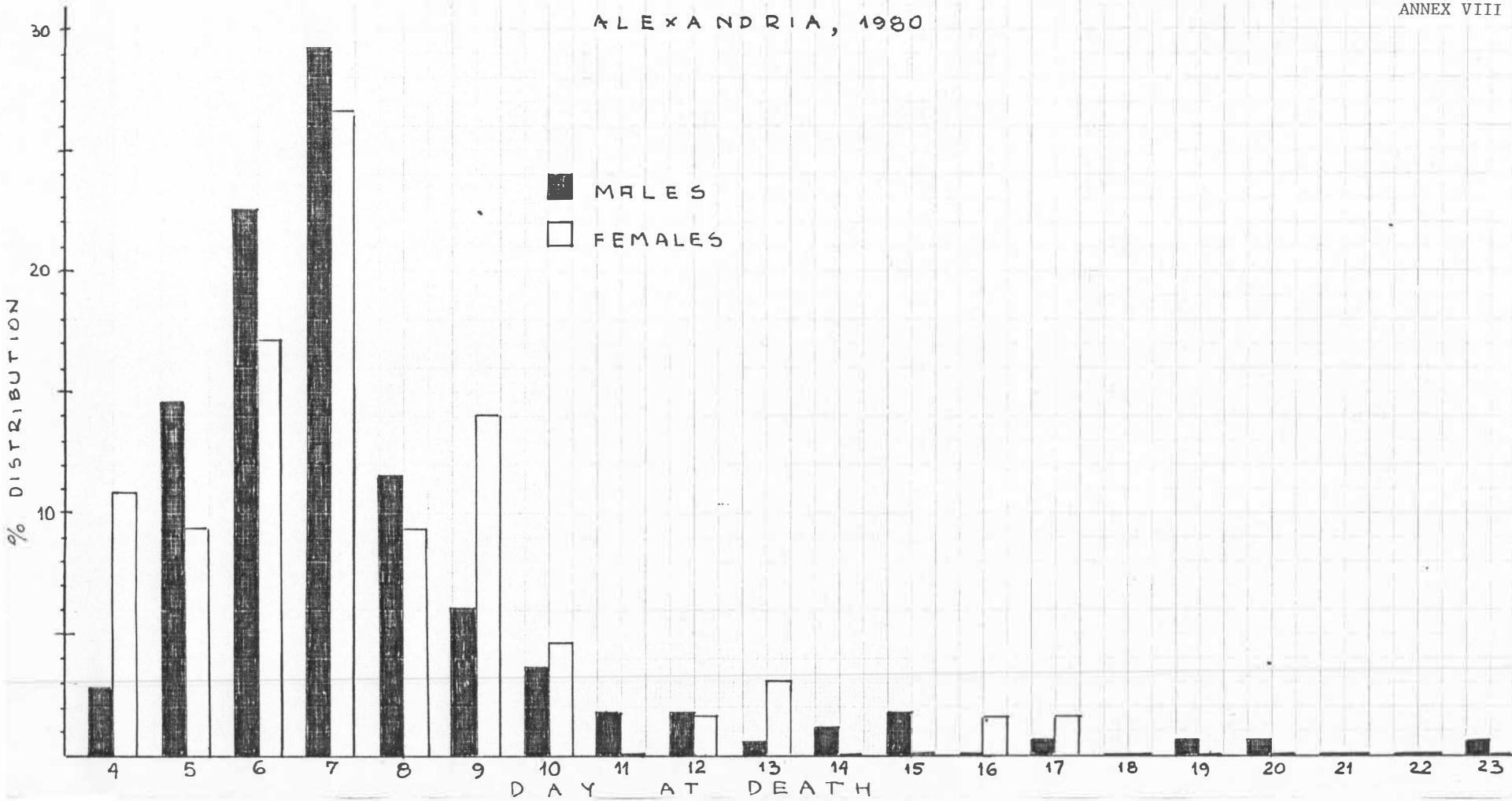


TABLE - 1

ANNEX VIII B

Reported number of cases and deaths from Neonatal & Non-Neonatal Tetanus
in Egypt in 1972 - 1980

Year	Number of Cases			Proportion of Neonatal Tetanus Cases in %	No. of Neonatal Tetanus Deaths	Case Fatality Rate in %
	Neonatal Tetanus	Non-Neonatal Tetanus	T O T A L			
1972	577	2041	2618	22.0	NA	
1973	765	2082	2847	26.8	NA	
1974	911	2176	3087	29.5	NA	
1975	1218	2080	3298	36.9	NA	
1976	1295	2071	3366	38.5	NA	
1977	1789	1676	3465	51.6	NA	
1978	1880	2341	4221	44.5	NA	
1979	1720	2578	4298	40.0	1254	72.9
1980	2957	1547	4504	65.7	1476	49.9

TABLE - II

Morbidity Rate

For Neonatal Tetanus per 1000 Live Births

For Total Tetanus per 100,000 Population.

Y e a r	Morbidity Rate	
	Neonatal Tetanus	Non-Neonatal Tetanus
1972	0.46	7.5
1973	0.61	7.9
1974	0.71	7.3
1975	0.91	8.9
1976	0.93	8.9
1977	1.2 ..	8.9
1978	1.2	10.5
1979	1.1	10.5
1980	1.8	10.7

TABLE - III

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Distribution of cases of Neonatal Tetanus
as regards attendant at delivery in
Alexandria Governorate.

Attendant	No of Cases	%
Physician.	12	6.31
Midwife.	4	2.11
Daya.	136	82.11
One of the Relatives.	18	9.47
T O T A L :	190	100.0

ANNEX VIII

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Source : ~~Wahdan Study of Tetanus Neonatorum Cases~~
in Alexandria Governorate.

TABLE - IV

Immunization Coverage %

Year	3 rd Dose of D.P.T. (Children 1 year)	2 nd Dose of T T. (Pregnant Women)
1977	86.8	1.1
1978	84.9	1.5
1979	79.4	6.9
1980	87.5	7.0

MORBIDITY RATE PER 1000 LIVE BIRTHS FOR NEONATAL
TETANUS AND PER 100,000 POPULATION FOR NON-NEONATAL TETANUS

FIGURE 1. ANNUALLY REPORTED MORBIDITY RATES FOR NEONATAL AND
NON-NEONATAL TETANUS, EGYPT, 1972 - 1980

