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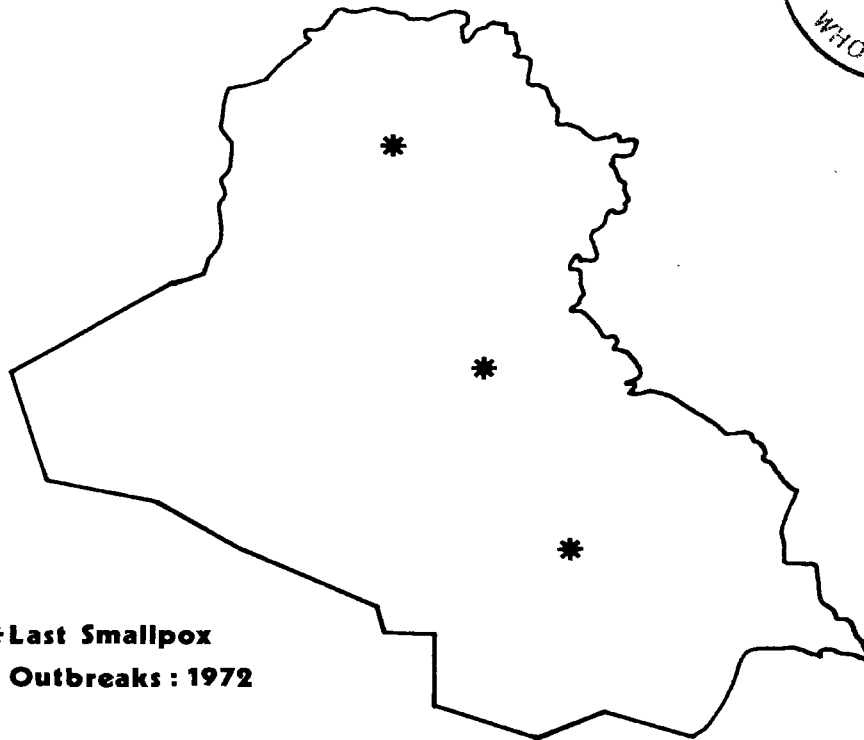
WHO/SE/78.114
Global Commission WP/78.26

ENGLISH ONLY

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**REPORT TO THE MEMBERS OF
THE GLOBAL COMMISSION
FOR THE CERTIFICATION
OF SMALLPOX ERADICATION**

IRAQ



*** Last Smallpox
Outbreaks : 1972**

**Ministry of Health, Iraq
World Health Organization**

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OUTLINE FOR COUNTRY REPORT - MINIMUM INFORMATION

A BASIC DEMOGRAPHIC DATA

1. Population: 12,171,485 (1977 census, includes Iraqis abroad)
2. Area: 438,446 km²
3. Average population density: 27 persons per km² (see Figure 1)
4. Urban population: 65.5% of total
5. Rural population: 34.5% of total
6. Nomadic population: included in rural population
7. Total number of villages: 14,300

(See also Annex 1)

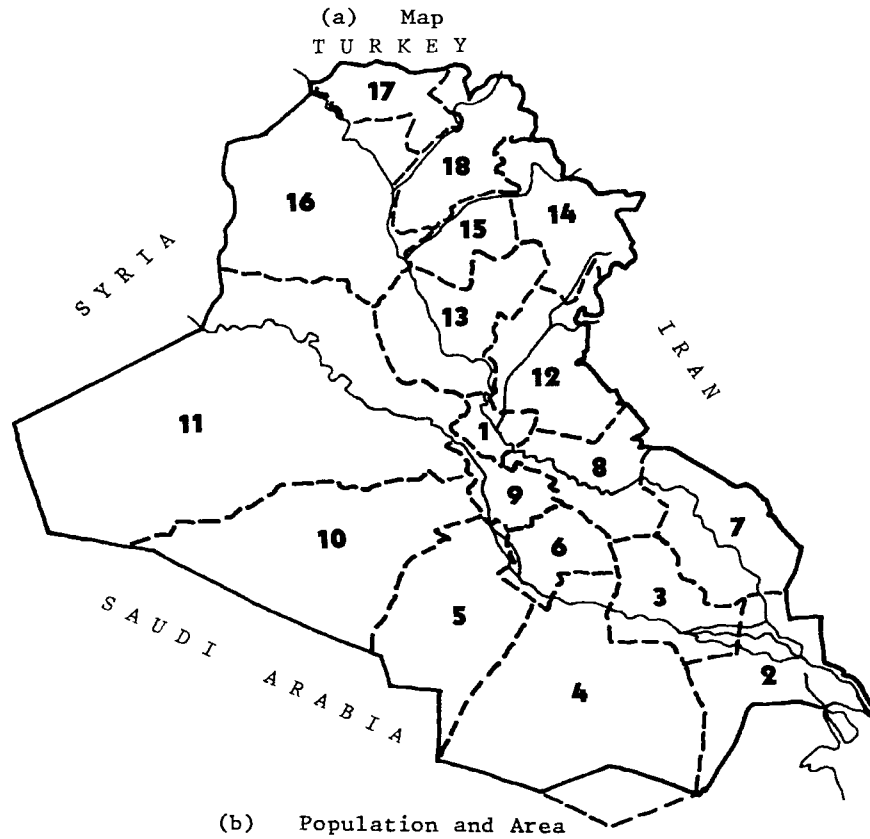
B ADMINISTRATIVE UNITS (see Figure 1)

<u>Type of Division</u>	<u>Total Number in Country</u>
Mohafazat (governorate)	18
Qada (district)	99
Nahia (sub district)	245

C HEALTH SYSTEM

1. Health facilities (see Figure 2)
2. Infectious Disease Hospitals
There are 14 IDH's, one in each of the larger mohafazats. In the remaining 4 smaller mohafazats there are infectious disease wards.
3. Health system structure relevant to communicable disease control (see Figure 3).

FIG. 1. ADMINISTRATIVE DIVISIONS OF IRAQ
18 MOHAFAZATS (GOVERNORATES)



Governorate	Population ^a (thousands)	Area ^a (km ²)	Population density (persons/km ²)
1 Baghdad	3 036	5 023	604
2 Basra	897	19 702	46
3 Thi-Qar	617	13 668	45
4 Muthanna	184	49 206	4
5 Najaf	354	26 834	13
6 Qadisiya	395	8 569	46
7 Maysan	419	16 774	25
8 Wasit	409	17 922	23
9 Babylon	565	5 503	103
10 Kerbela	243	52 856	5
11 Anbar	405	89 540	5
12 Diala	663	19 047	35
13 Salah al Dir	356	21 326	17
14 Sulaimaniya	656	16 482	40
15 Tamim	439	9 426	47
16 Ninevah	1 158	41 320	28
17 Dhok	217	6 374	34
18 Arbil	493	14 428	34
TOTAL	11 505	434 000	27

^a 1976 estimate

Fig. 2: Number of Health Facilities, Doctors and Pharmacists, by Mohafazat

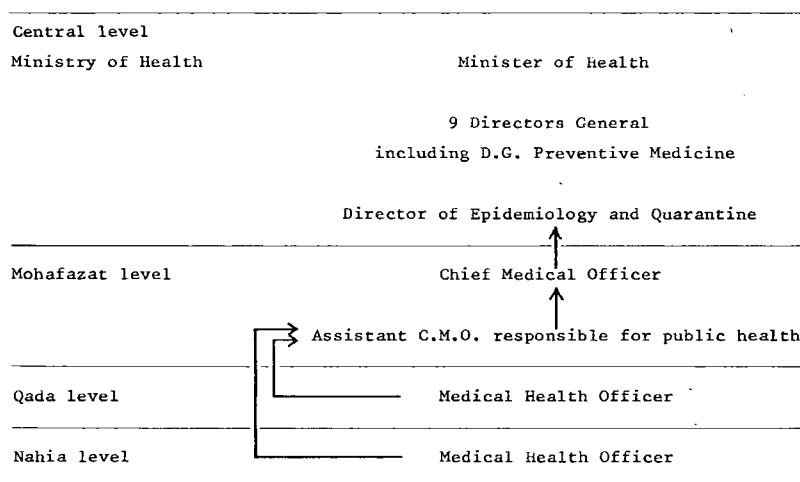
Governorate ^a	Population ^a (thousands)	Hospitals ^b	Rural Health Centres	Dispensaries	MCH Centres	Outpatients Clinics	Mobile Dispensaries	Practising Doctors	Pharmacists
Baghdad	3 523	42	1	56	19	42	21	2 185	920
Basra	947	14	4	31	8	12	19	356	71
Ninevah	909	13	2	32	8	16	14	323	84
Maysan	362	9	1	7	5	11	-	98	27
Arbil	491	10	-	18	2	6	5	131	17
Qadisiya	416	8	5	13	8	8	11	119	16
Diala	496	8	1	12	4	6	12	192	25
Anbar	387	8	1	14	7	9	13	144	27
Babylon	594	6	-	12	4	5	7	175	30
Kerbela	588	3	-	22	3	2	5	219	35
Kirkuk	600	10	-	26	5	5	7	175	34
Wasit	386	6	5	4	5	6	1	104	21
Thi-Qar	549	7	4	12	2	7	12	125	22
Sulaimaniya	555	7	-	24	6	7	9	98	16
Dhok	168	3	1	6	2	3	-	49	7
Muthanna	152	4	4	4	3	4	3	57	9
TOTAL	11 124	158	29	293 ^c	91	149	169	4 553	1 361

^a In 1975 there were only 16 governorates (for boundaries at that time see Annex 1)

^b Government and private

^c 173 central and 120 at qada, nahia or village level

Fig. 3: Health Service Administration Relevant to Communicable Disease Reporting System



← routine monthly reporting of communicable disease

in the event of suspect or verified cases of particular diseases (including smallpox) immediate reporting by telephone

D REPORTING SYSTEM FOR NOTIFIABLE DISEASES

Communicable diseases are notified to the Department of Epidemiology and Quarantine in Baghdad every month. Smallpox and chickenpox are both notifiable diseases. If no disease is detected a routine "NIL" report is sent.

In any case where urgent action may be required direct reporting by telephone is usual.

All diseases are notified monthly utilizing a specially designed book containing the I.C.D. list of 150 causes. In health units without a doctor another special form is utilized (smallpox and chickenpox being second and third on the list). Reports are compiled at governorate level and forwarded to the Ministry of Health in Baghdad.

The reporting is generally regular; health units not reporting are contacted to explore the reason.

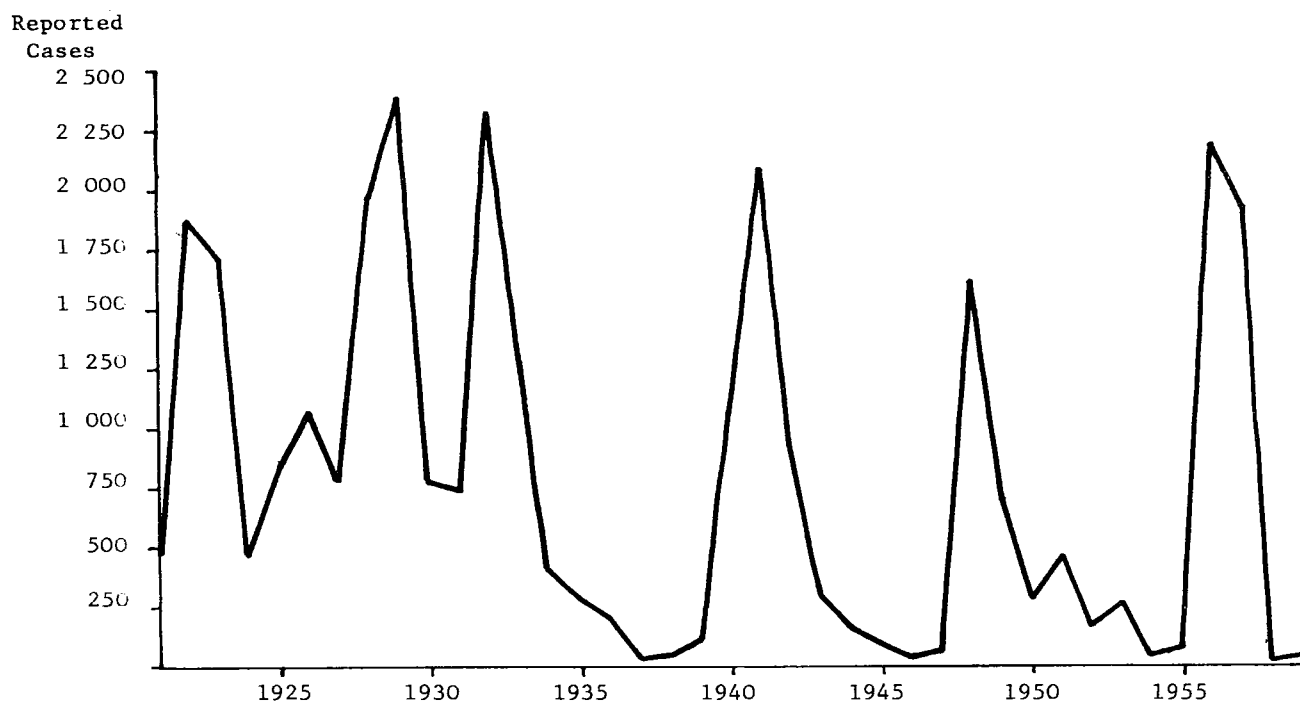
Any reported case of "suspected smallpox" is treated as a priority and if considered necessary is investigated by a team from the Department of Epidemiology and Quarantine.

E SMALLPOX DATA

1. Cases and Deaths Reported 1935-1978 (Figure 4)

Year	Cases	Deaths	Year	Cases	Deaths
1935	264	80	1957	1 924	222
1936	198	45	1958	6	2
1937	28	2	1959	23	0
1938	39	10	1960	0	0
1939	111	19	1961	0	0
1940	1 049	127	1962	0	0
1941	2 089	273	1963	0	0
1942	896	83	1964	0	0
1943	282	41	1965	0	0
1944	138	12	1966	0	0
1945	90	16	1967	0	0
1946	18	3	1968	0	0
1947	65	16	1969	0	0
1948	1 740	155	1970	0	0
1949	707	102	1971	0	0
1950	272	25	1972	37	5
1951	469	32	1973	0	0
1952	157	20	1974	0	0
1953	251	37	1975	0	0
1954	22	0	1976	0	0
1955	72	5	1977	0	0
1956	2 173	281	1978	0	0

Fig. 5: Reported Smallpox Cases by Year 1921-1959



2. The last major epidemic

Period: 1956-57

Total reported cases (2 years): 4 097

Total reported deaths (2 years): 503

Case fatality rate: 12-3%

Areas heavily infected:

3. The last known smallpox outbreak

(See Annex 2 for additional details)

Total cases: 37

Total deaths: 5

Source of infection: probably Iran

Measures taken: Control of the epidemic was achieved through localized containment activities and a mass vaccination campaign throughout Iraq. Vaccinations performed in 1971 and 1972, by Governorate are shown in Figure 7 with an estimate of the percentage of the population vaccinated in 1972.

Fig. 6: Period and Mohafazats Affected

Month 1972	March					April					May				June		TOTAL
Week No.	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	TOTAL
Baghdad	1	3	4	2	0	2	2	1	1	1	1	1	1	0	0	1	21
Arbil	5																5
Muthanna	0	2	8	1													11
TOTAL	6	5	12	3	0	2	2	1	1	1	1	1	1	0	0	1	37

Fig. 7: Number of Smallpox Vaccinations, 1971-1972, by Mohafazat

Mohafazat	Estimated population of Mohafazat	Vaccinated in 1971	Vaccinated in 1972	Percentage of population vaccinated in 1972
Baghdad	2 696 000	543 825	2 479 201	92
Basrah	799 300	157 287	723 614	90
Ninevah	742 797	196 133	797 172	100
Sulaimaniya	469 200	88 058	335 732	71
Arbil	421 000	106 242	268 432	64
Kirkuk	535 700	248 550	152 348	28
Dhok	169 009	51 332	133 956	79
Diala	445 300	57 596	658 817	100
Anbar	345 600	70 635	380 051	100
Qadisiya	400 092	171 420	342 210	86
Muthanna	166 471	73 300	150 940	90
Kerbela	447 900	273 624	525 354	100
Wasit	359 800	134 262	317 766	88
Babylon	461 600	36 206	324 285	70
Thi-Qar	524 100	81 935	309 807	59
Maysan	355 900	70 639	344 927	97
TOTAL	9 339 769	2 361 044	8 244 612	88

4. Suspected Smallpox Cases

Specimens for laboratory examination have been taken from all suspected smallpox cases reported since July 1972. All proved smallpox negative. Further details are included in section G of this report.

F SMALLPOX VACCINATION DATA

1. Vaccination policy

Primary smallpox vaccination is obligatory and is usually carried out in the course of infant immunization or at the time of entry to school or pre-school. Revaccination of children every 3-5 years is usual.

Vaccination requirements for international travellers entering Iraq have been modified in accordance with WHO recommendations. A valid vaccination certificate is required from any traveller coming from a smallpox infected country.

2. Vaccinations performed

Numbers of vaccinations performed, by mohafazat, in 1971 and 1972 are shown in Figure 7. The vaccinations performed throughout Iraq in the following years were:

1973	1 206 564
1974	1 327 537
1975	859 045

Primary and revaccination performed by mohafazat from 1976-1978 are shown in Figure 9.

3. Vaccination scar survey

The results of a small vaccination scar survey made in August 1972 are shown in Figure 10.

Fig. 9: Primary and Revaccinations by Mohafazat, 1976-1978

Mohafazat	1976			1977			1978 (to 30 April)		
	Primary	Revaccination	Total	Primary	Revaccination	Total	Primary	Revaccination	Total
Baghdad	130 836		209 736	91 007	73 773	164 780	33 723	208	33 931
Basra	23 605	26 065	49 670	35 287	37 474	72 761	13 579	88	13 667
Ninevah	41 848	30 401	72 249	17 304	21 329	38 633	13 009	0	13 009
Dhok	3 762	1 620	5 382	4 165	3 646	7 811	301	0	301
Maysan	8 327	0	8 327	7 864	0	7 864	0	0	0
Arbil	14 819	1 825	16 644	24 283	4 174	28 457	614	0	614
Qadisiya	15 692	0	15 692	6 991	0	6 991	0	0	0
Muthanna	2 270	2 125	4 395	2 212	1 112	3 324	2 573	482	3 055
Diala	5 022	3 138	8 160	4 972	4 548	9 520	4 146	0	4 146
Anbar	9 648	8 948	18 596	12 248	11 419	23 667	2 284	0	2 284
Babylon	17 806	4 277	22 083	5 284	3 042	8 326	3 670	43	3 713
Kerbela	8 257	8 338	16 595	4 939	4 657	9 596	26	0	26
Tamim	6 686	7 677	14 363	5 487	8 028	13 515	992	10	1 002
Wasit	4 838	3 898	8 736	5 402	11 555	16 957	1 192	0	1 192
Thi-Qar	9 492	0	9 492	9 599	0	9 599	1 207	35	1 242
Sulaimaniya	22 683	5 010	27 693	24 177	0	24 177	0	0	0
Najaf	9 008	0	9 008	10 387	0	10 387	3 594	0	3 594
Salah-al-Dir	8 839	281	9 120	11 258	0	11 258	757	0	757
TOTAL	343 433	182 509	525 942	283 666	183 957	467 623	81 667	866	82 533

Fig. 10: Vaccination Coverage as Assessed by Scar Survey in 3 cities;
August 1972

Age group	Baghdad		Mosul		Arbil	
	No. examined	% vaccinated	No. examined	% vaccinated	No. examined	% vaccinated
1	61	27	53	58	84	82
1-4	165	90	202	94	323	96
5-14	316	81	388	97	693	95
15+	479	71	585	93	1 063	92
TOTAL	1 021	75	1 228	93	2 163	93

G CHICKENPOX DATA

1. Chickenpox Cases and Deaths Reported 1976-1978
(Figure 11)

Muhafazat	1976		1977		1978 (to 31 March)	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Baghdad	1 137	1 ^a	2 501		343	
Basra	1 693		3 213		385	
Ninevah	364		428		74	
Dhok	219		376		59	
Maysan	118		242		16	
Arbil	95		227		91	
Qadisiya	41		168		11	
Muthanna	26		33		0	
Diala	36		99		20	
Anbar	44		105		2	
Babylon	270		177		68	
Kerbela	327		271		38	
Tamim	233		367		63	
Wasit	113		241		8	
Thi-Qar	250		268		13	
Sulaimaniya	390		605		74	
Najaf	18		17		18	
Salah al Dir	19		83		18	
TOTAL	5 423	1	9 421	0	1 301	

^a Child less than one year old. No other deaths have occurred due to chickenpox 1976-1978.

Chickenpox cases reported for the years 1968-1975, cases reported monthly and age distribution of cases for the years 1974-1977 are shown in Annex 3.

H LABORATORY DATA

Since July 1972, 162 specimens from rash cases have been examined in the Central Public Health Laboratory in Baghdad. All were found to be smallpox negative. The collection of specimens from selected chickenpox cases continues.

Laboratory tests carried out in this laboratory are:

1. Light Microscopy (Gispen's method)
 2. Agar Gel Diffusion
 3. Inoculation of Chorioallantoic Membrane of Chick Embryo
- Electron Microscopy was not available at the time.

The details of the specimens collected are summarized below.

Fig. 13: Distribution of Specimens Collected by:

(a)	Period of Collection	Number	(b)	Governorate	Number
	July-Dec. 1972	11		Baghdad	85
	1973	57		Kerbela	52
	1974	24		Diala	13
	1975	23		Muthanna	9
	1976	8		Babylon	6
	1977	12		Wasit	8
	January 1978	27		Anbar	4
	TOTAL	162		Qadisiya	5
				Maysan	2
				Thi-Qar	1
				Basra	3
				Others	0
				TOTAL	188

(c)	Age Group	Number	(d)	Sex	Number
	1	12		Males	96
	1-4	21		Females	65
	5-9	30		Unknown	1
	10-14	11			
	15+	88			
	TOTAL	162			

Fig. 14: Summary of Specimens Tested in Laboratories of
WHO Collaborating Centres on Poxvirus Research, 1978

Sl. No.	Patient			Date Received	Location of Testing Lab.	Results*		
	Name or Case Number	Age	Sex			EM	PPT	CAM
1	Mahbub Al-Rahman	50	M	5.4.78	Moscow	negative	negative	negative
2	Iftikar Mahmood	2ms	F	5.4.78	Moscow	"		"
3	Abdul Manan Sahadet	30	M	3.5.78	Moscow	"		"
4	Hasim Radhi Kadhim	1	M	3.5.78	Moscow	"		"
9	Saba Hady Kadim	5	F	15.5.78	Atlanta	"		
10	Salama Dabor Kadim	3	M	15.5.78	Atlanta	"		
10A	Mahasin Mohamed Asal	1	F	15.5.78	Atlanta	"		"
11	Fakriyah Kareem Jadou	14	F	6.6.78	Moscow	"		
12	Hussain Kuthair Abbas	2	M	13.6.78	Atlanta	"		
13	Hussain Kuthair Abed	5ms	M	13.6.78	Atlanta	"		
14	Samira Husain Jaas	2	F	13.6.78	Atlanta	"		

*Blank spaces indicate results pending.

Annex 1

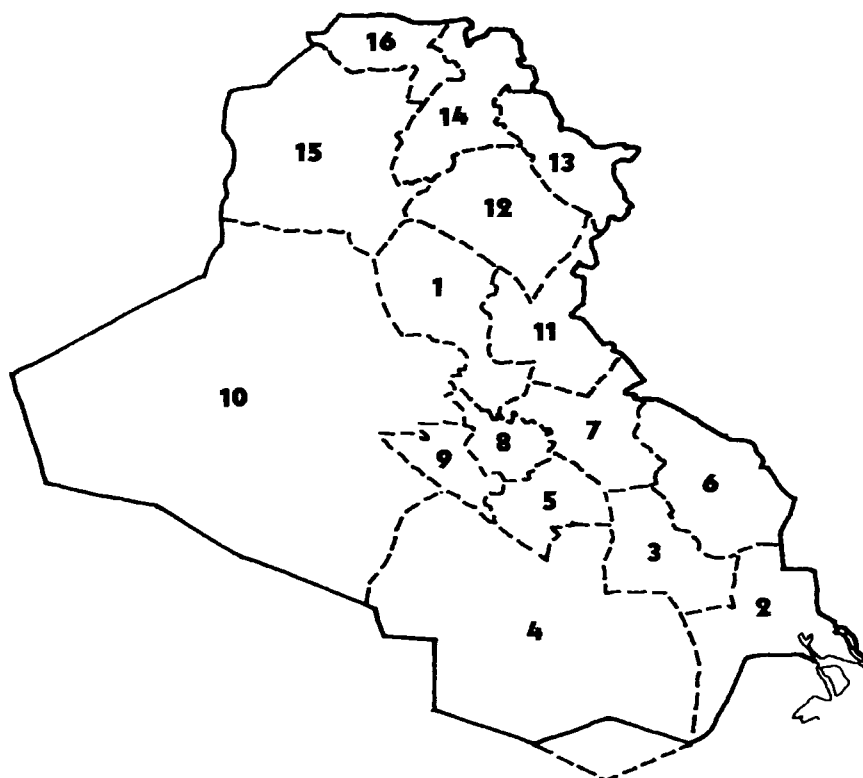
ADDITIONAL GENERAL INFORMATION

1. Demographic Rates (per thousand) (1973-1975)

	<u>Rural</u>	<u>Urban</u>	<u>Country</u>
Crude Birth Rate	47.0	39.6	42.6
Crude Death Rate	12.8	9.1	10.6
Natural Increase Rate	34.3	30.5	32.0
Net Migration Rate	-22.7	11.2	-
Growth Rate	11.6	41.7	32.0

2. Age Distribution of Population (estimated 1977)

<u>Age</u>	<u>Percentage of total population</u>
1	4.4
1-4	14.6
5-9	15.5
10-14	13.1
15-19	10.8
20+	41.6
Total	100.0



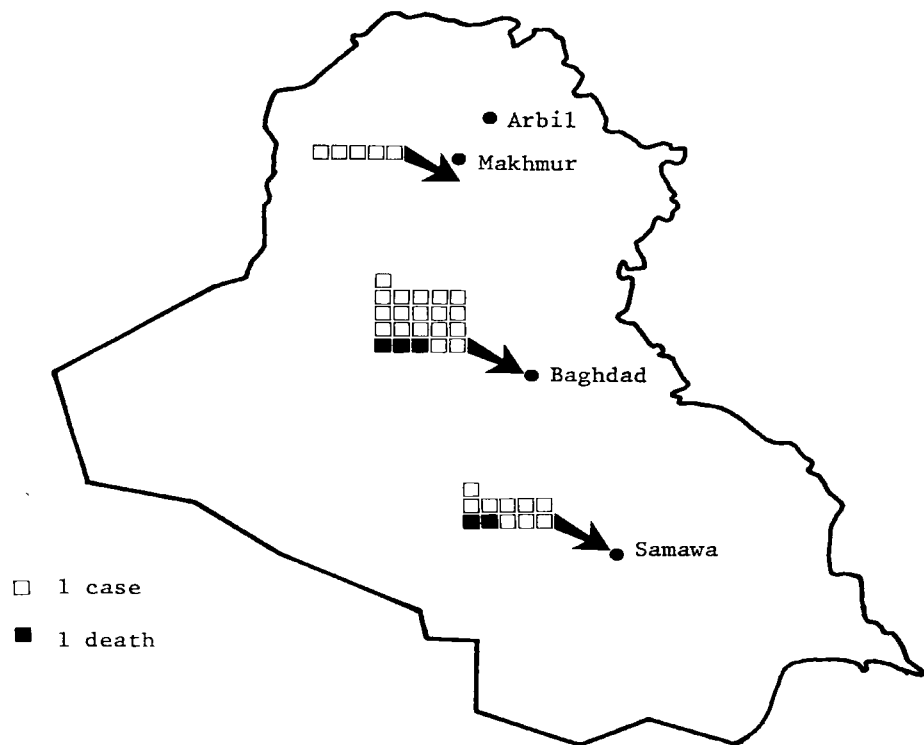
1. Baghdad
2. Basra
3. Thi-Qar
4. Muthanna
5. Qadisiya
6. Maysan
7. Wasit
8. Babylon
9. Kerbela
10. Anbar
11. Diala
12. Kirkuk
13. Sulaimaniya
14. Arbil
15. Ninevah
16. Dhok

THE 1972 SMALLPOX OUTBREAKS IN IRAQ

1. Introduction

During March to June of 1972 a total of 37 smallpox cases and 5 deaths were reported from 3 mohafazats of Iraq. The localities infected are shown in the map below.

Locations of 1972 Smallpox Outbreaks



2. Arbil Outbreak

Location: an isolated village of seven households 20 km south of Makhmur in the south west of Arbil mohafazat.

Cases: 5

Deaths: 0

Reported: 1 March 1972

Source of infection: not determined

3. Baghdad Outbreaks

Location: different areas of Baghdad city

Cases: 21

Deaths: 3

Reported: 8 March 1972 (when the first detected case was admitted to the fever hospital)

Source of infection: not determined

Note: During the period of the smallpox outbreaks the following rash cases were admitted to the fever hospital: 43 chickenpox, 4 vaccinia, 3 skin "sensitivity", 2 unspecified rash.

4. Muthanna Outbreaks

Location: 2 areas adjacent to Samawa town

(a) Ghesla (3 cases)

(b) Cement factory residential area (8 cases)

Cases: 11

Deaths: 2

Reported: 11 March 1972 (when the first detected case was admitted to the fever hospital)

Source of infection: Babalsheik, Baghdad

5. Age, Sex, Death and Vaccination History of Smallpox Cases

Age years	Male	Female	Total	Deaths	Vaccinated	Not vaccinated
-1	3	6	9 (24%)	2	-	9
1-4	6	8	14 (38%)	-	1	13
5-14	4	7	11 (30%)	3	2	9
15+	1	2	3 (8%)	-	1	2
TOTAL	14 (38%)	23 (62%)	37 (100%)	5 (13.5%)	4 (11%)	33 (89%)

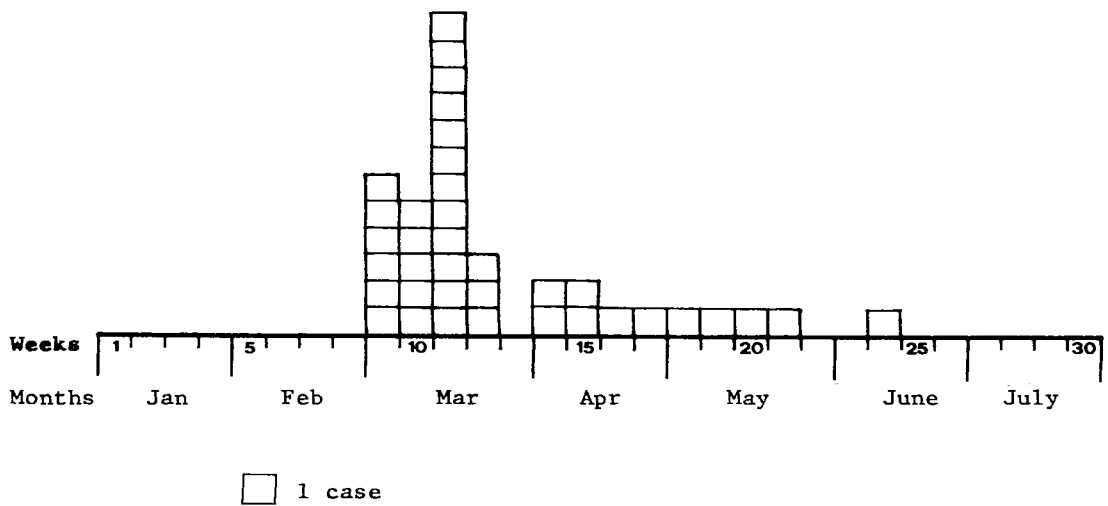
6. Control Measures

(a) Isolation of cases in fever hospitals.

(b) Compulsory mass vaccination, throughout Iraq with emphasis on infected mohafazats.

(c) Publicity to encourage case reporting.

Smallpox Cases by Week: January-July 1972



ADDITIONAL CHICKENPOX DATA

1. Chickenpox Cases and Deaths Reported 1968-1975

Year	Cases	Deaths	Year	Cases	Deaths
1968	1 933	0	1972	4 147	0
1969	1 257	0	1973	5 309	0
1970	2 661	0	1974	3 956	1
1971	3 258	0	1975	4 758	1

2. Chickenpox Cases and Deaths by Month 1974-1978

	1974		1975		1976		1977		1978	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Jan	336		329		422		852			
Feb	404		447		438		1 116			
Mar	554	1	566	1	756		1 568			
Apr	658		1 007		879		1 869			
May	856		1 033		999	1	1 835			
June	358		503		511		964			
July	147		206		206		399			
Aug	105		94		148		276			
Sept	45		65		61		93			
Oct	70		61		131		71			
Nov	160		193		332		144			
Dec	263		254		540		234			
Total	3 956	1	4 758	1	5 423	1	9 421	0		

3. Age Distribution of Reported Chickenpox Cases 1974-1978

Age group	1974	1975	1976	1977	1978
1	220	266	267	518	
1-4	2 452	2 538	2 900	5 009	
5-9	1 052	1 523	1 786	3 143	
10-14	157	302	336	558	
15+	75	129			
Total	3 956	4 758	5 423	9 421	