



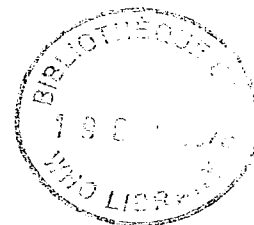
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INDEXED

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

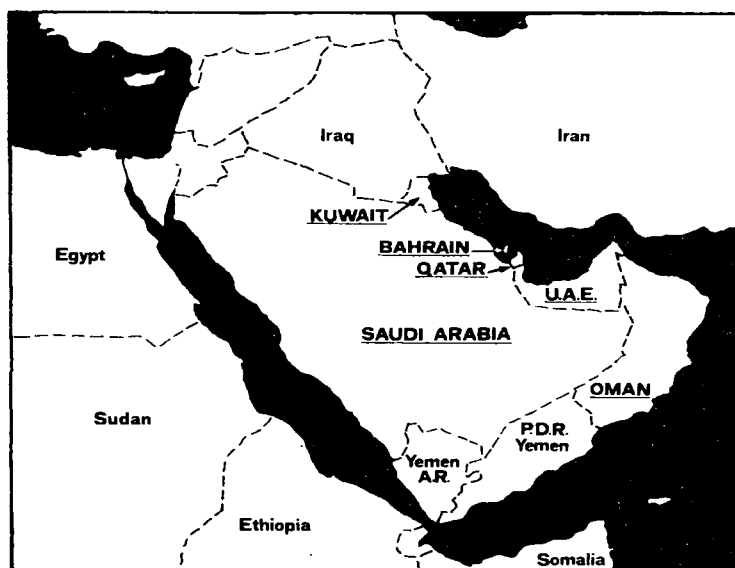


ON

THE SMALLPOX FREE STATUS
OF THE
ARAB COUNTRIES OF THE GULF AREA

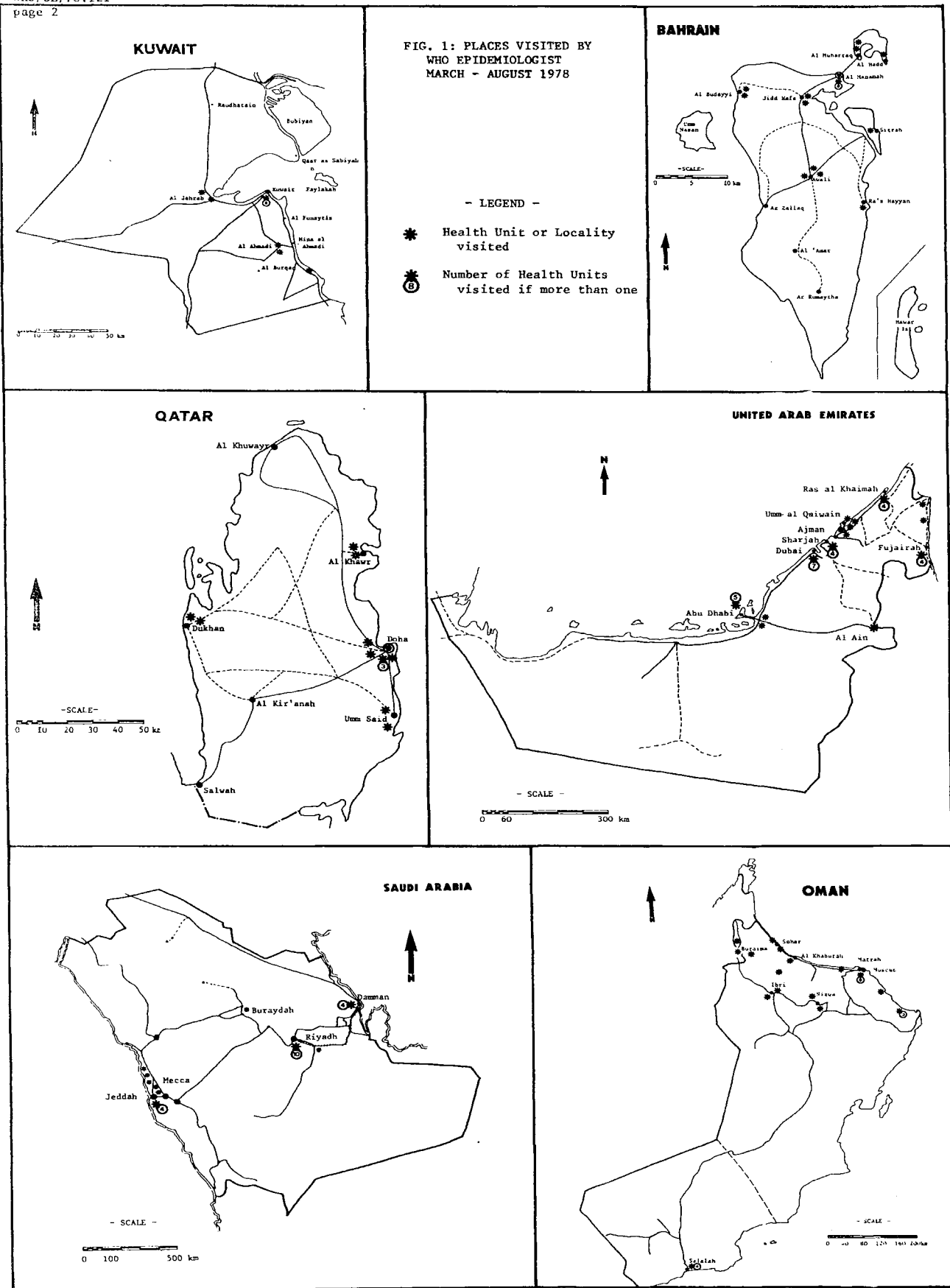
by

Dr A. G. Rangaraj, WHO Epidemiologist



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Secretariat

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1. INTRODUCTION

I was assigned for a period of six months from 1 March to 31 August 1978 to the Arab Countries of the Gulf Area, namely, Saudi Arabia, Kuwait, Bahrain, Qatar, United Arab Emirates and Oman, to supervise and assess the plan of action activities for certification of smallpox eradication, which were decided upon between the ~~Secretaries~~ General of Health for the countries concerned and the World Health Organization. The results of these activities have already been documented in the separate country reports. Hence, I shall confine myself only to my own findings in regard to the smallpox free status of the specified countries.

2. FIELD ACTIVITIES

During my tour of duty I visited each country three times. My initial visits mainly involved explaining to all concerned the reasons for the various activities as laid down in the plan of operation and ensuring that the activities had been started on the right lines. My second visit was to assess the progress made, to investigate all suspect smallpox reports and make enquiries of persons found with smallpox scars as to when and where they were afflicted with the disease.

In every country I visited the Public Health Laboratory, the infectious diseases hospital, many public health units, hospitals, health centres and clinics in different parts and toured areas of epidemiological importance, particularly border areas and those where the last outbreaks had occurred.

Wherever I went I made enquiries of the government staff, private practitioners, school teachers, missionary doctors, oil company medical officers, bilateral aid agency people and, of course, the local population, about any rumour or suspect smallpox cases or of the last case of smallpox in the area, if known to them. I also participated in the facial pockmark or vaccination scar surveys that were being conducted locally at the time.

The people I met with by categories and the places I visited during the period, are shown in Table 1 and Fig. 1. It will be noted that in Saudi Arabia, due to its vastness and the limited time available, I could visit only places in eastern, central and western regions which are of epidemiological importance, while in other countries I was able to cover most of the populated area.

TABLE 1

HEALTH STAFF CONTACTED IN THE ARAB COUNTRIES OF THE GULF AREA

| Level or Category | Saudi Arabia | Kuwait | Bahrain | Qatar | U.A.E. | Oman |
|--|---|--|---------|-------|--------|------|
| Health Ministry | H.E. the Deputy Minister | in each country H.E. the Minister of Health and one or more Under Secretaries of Health | | | | |
| Directorate | in each country the Directors of Preventive and Curative Medicine | | | | | |
| Public Health Section or Unit Chiefs | 8 | 7 | 4 | 2 | 10 | 8 |
| Medical Officers ^a _b | 50 | 100 | 50 | 45 | 200 | 150 |

^a These figures include government staff; medical officers of oil companies, missionary institutions, bilateral aid agencies and autonomous units; and private practitioners. The figures are approximate and represent the estimated minimum number of persons contacted.

^b With all these persons discussions concerned their views of the smallpox situation past and present, any rumours and suspect cases.

3. GENERAL IMPRESSIONS

3.1 Area and Population

The countries cover an area of 2.5 million square kilometres and they have a total estimated population of a little over 11 million. There are vast areas of desert country which are completely unoccupied. Because of the oil wealth, within the last decade the people have been transformed from a pastoral to an urban society. Except in Saudi Arabia, where the urban population is 41% of the total, the other countries have predominantly urban populations, ranging from 70% to 80% of the total (Table 2).

The nomadic populations have become almost non-existent, since gigantic settlement programmes for them have been taken up by the various governments. Only in Saudi Arabia can a few nomads (Bedouins) still be seen.

There are sizeable expatriate populations in these countries - as high as 40% in some of the smaller countries.

TABLE 2
ARAB COUNTRIES OF THE GULF AREA
AREAS AND POPULATIONS

| Country | Area ₂ in km ² | Total Estimated Population | % of Urban Population | % of Nomadic Population | Density per km ² |
|--------------|---|----------------------------------|--------------------------|----------------------------|--------------------------------|
| Saudi Arabia | 2 149 690 | 7 855 00 | 41 | 4.2 | 3 |
| Kuwait | 17 818 | 1 129 200 | 83 | 1 | 67 |
| Bahrain | 650 | 300 000 | 74 | - | 404 |
| Qatar | 11 000 | 180 000 | 80 | - | 17 |
| U.A.E. | 77 700 | 850 000 | 78 | - | 10 |
| Oman | 272 000 | 1 500 000 | 70 | - | 5 |

3.2 Health Services

There are health units galore: hospitals, health centres, MCH clinics, school health clinics and dispensaries. There has been an immense building activity during the last five years and there are more and more hospitals and health clinics being built. In short, wherever there is a human habitation there is some type of health unit. As a result of good communications the people have easy access to these facilities. The only exception is the mountainous Dofar region in Oman, where the population is served by weekly visits of helicopter-borne physicians and medical assistants.

There is no dearth of medical manpower; because of the financial resources available a large number of expatriate medical staff have been recruited in every one of these countries. In fact, they constitute about 70-90% of the total strength. There is more than one doctor per 1 000 population. There is a shortage only in a few of the specialities.

The medical services are foci of change. The utilization of the hospital services by the people is striking. They seem to throng to these institutions even for minor ailments and private practitioners are also being kept busy.

3.3 Public Health Structure

Every country has an organized Ministry of Health, with curative and preventive medicine departments, and there are public health centres/ compounds/units in the various administrative divisions responsible for surveillance of diseases and institution of preventive and control measures.

The quarantine organizations in these countries are remarkable, particularly the one in Saudi Arabia. Because of the Haj pilgrimage, and of the prestige involved in arranging it properly, these organizations have developed into well run machinery.

3.4 Disease Surveillance

It was heartening to note that all cases of fever and rash, e.g. measles, chickenpox, smallpox and so on, have all along been notifiable. Although in no country could it be said that the reporting has been complete or regular, the public health staff have been alert; in all suspect cases of smallpox investigations followed. In fact, all such cases, as well as serious cases of chickenpox, were admitted to the infectious diseases hospitals or wards for further observation and treatment. When indicated, laboratory specimens were taken for confirmation of the diagnosis (Table 3).

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TABLE 3
NUMBER SUSPECT SMALLPOX CASES EXAMINED, 1968-1978

| Year | Country | | | | | |
|------|--------------|--------|---------|-------|--------|------|
| | Saudi Arabia | Kuwait | Bahrain | Qatar | U.A.E. | Oman |
| 1968 | - | 2 | - | - | - | - |
| 1969 | - | 2 | - | - | - | - |
| 1970 | - | - | - | - | - | - |
| 1971 | 8 | - | - | - | 5 | - |
| 1972 | - | 2 | - | - | 5 | - |
| 1973 | - | - | - | - | 1 | - |
| 1974 | - | - | - | - | - | - |
| 1975 | - | - | - | - | - | - |
| 1976 | - | - | - | - | - | - |
| 1977 | - | - | - | - | - | - |
| 1978 | 1 | 1 | - | - | 2 | - |

4. SMALLPOX INCIDENCE

4.1 Introduction

The smallpox incidence in these countries since 1957 is shown in Table 4. As can be seen only Saudi Arabia had endemic smallpox till 1960, while the other countries have been non-endemic for 20 years now. All the outbreaks that have occurred since 1960 have been attributed to importations of the infection from either Iraq, India, Pakistan or Bangladesh. Strangely enough no importation occurred from any of the countries on the western or southern sides, such as Ethiopia, Somalia or Yemen, during this period.

TABLE 4
ARAB COUNTRIES OF THE GULF AREA
SMALLPOX INCIDENCE, 1957-1977

| Year | Country | | | | | |
|-------------|--------------|--------|---------|-------|--------|------|
| | Saudi Arabia | Kuwait | Bahrain | Qatar | U.A.E. | Oman |
| 1957 | 65 | 23 | 68 | 0 | 0 | 0 |
| 1958 | 156 | 0 | 0 | 0 | 0 | 0 |
| 1959 | 115 | 10 | 0 | 0 | 0 | 0 |
| 1960 | 32 | 0 | 0 | 0 | 0 | 0 |
| 1961 | 17 | 0 | 0 | 1 | 0 | 0 |
| 1962 | 1 | 1 | 0 | 0 | 17 | 8 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 41 | 0 | 0 | 10 | 0 |
| 1968 | 0 | 0 | 0 | 0 | 2 | 0 |
| 1969 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1970 | 0 | 0 | 0 | 0 | 18 | 0 |
| 1971 | 0 | 0 | 0 | 0 | 30 | 0 |
| 1972 -77 | 0 | 0 | 0 | 0 | 0 | 0 |

4.2 Saudi Arabia

In Saudi Arabia there was a rumour of 31 smallpox cases during 1972 in Al Kharj and Al Dharia, areas south of Riyadh. Again, there was a rumour of a single smallpox case that had come from Iraq to Riyadh in 1973. But these were not officially confirmed. Scar surveys carried out particularly in these areas did not show any confirmatory evidence of these rumours.

Again, there were two suspect smallpox cases on board the ship "Al Basha" that arrived in Jeddah in early April 1975; the investigations by WHO staff proved them to be chickenpox cases.

The last known outbreak in this area was in 1973 on board the ship "S.S. Mohamedi." A single case was discovered on board the ship, the source of infection of which was Bangladesh. No spread occurred among the quarantined passengers or crew of this ship.

4.3 Kuwait

The last outbreak in Kuwait was in 1967 when 41 cases occurred due to an importation of the infection from Pakistan. Initial cases were misdiagnosed as chickenpox. The WHO headquarters and regional staff were involved in the investigation and supervision of the containment activities which were thoroughly documented. Since then there have been odd instances when smallpox was suspected, but laboratory examinations proved all of them to be negative.

4.4 Bahrain

Bahrain has been exceptionally free of the disease since 1957 when two outbreaks occurred, one of a single case in Dumistan and the other of 67 cases in Maqsha, near Matrah, both being due to introduction of the disease from Iraq.

In 1958, there was one smallpox case on board the ship "B.I. Sirdhana," which was quarantined on the ship and there was no spread of the disease.

Similarly, in 1962 the ship "B.I. Dumra", carrying a Pakistani smallpox case, was quarantined and so were the passengers (separately). No further infection resulted.

4.5 Qatar

Except for a single case in 1961, for which no particulars were available, Qatar has been singularly free of the disease for more than two decades.

4.6 U.A.E.

All the outbreaks here have been said to be due to importations of the infection. There is documentary evidence to show that the 1967 outbreak of 10 cases in Dubai was due to a Pakistani patient, and it is thought that this was also the cause of an outbreak of two cases in Sharjah in 1968.

The outbreak of 18 cases in December 1970 in Dubai was well investigated and energetic containment measures taken by the medical authorities; unfortunately, its spread to Al Ain, in early 1971, was not immediately recognized. It came to the notice of the Health Ministry in Abu Dhabi only in April. The outbreak spread to Abu Dhabi also due to a hospital transfer. It ended only in June 1971.

I visited the area of outbreak and found many more than 30 reported cases had occurred and also noted that there was no foundation to the previous idea that the outbreak in Al Ain must have emanated from the adjoining Buremyi district of Oman.

4.7 Oman

Nothing was known about the situation in Oman until 1970 when the present Health Ministry came into being. Though there was a report of 8 cases in 1962, no particulars of this outbreak are available. Since 1970, however, the Ministry has confirmed that there has been no incidence of smallpox.

Lately, there has been a rumour of two smallpox cases in Buremyi district. I personally visited the area twice and thoroughly investigated the rumour which turned out to be simple, straightforward cases of chickenpox.

The smallpox-free status of Oman has been doubted by adjoining countries in the past. However, enquiries made of foreign missionaries and medical officers, matrons and nurses who have been in the country for 15 to 20 years and have visited all parts of the country indicate that the country does not seem to have experienced the disease for at least a decade now. This is also supported by smallpox scar surveys.

4.8 Summary

The whole area has been non-endemic for smallpox for almost two decades. The last importation of the infection was in 1970/71 in Dubai, Al Ain and Abu Dhabi districts of the U.A.E. (Table 5).

TABLE 5
ARAB COUNTRIES OF THE GULF AREA
YEAR, PLACE, CASES AND SOURCE OF INFECTION
OF THE LAST OUTBREAK IN EACH OF THE COUNTRIES

| Country | Year | Place | No. of Cases | Deaths | Source of Infection |
|--------------|---------|------------------------------|--------------|--------|---------------------|
| Saudi Arabia | 1962 | Riyadh? | 1 | - | Iraq? |
| Kuwait | 1967 | Jahra | 41 | 19 | Pakistan |
| Bahrain | 1956/57 | Dumistan Maqsha | 68 | 12 | Iraq |
| Qatar | 1961 | Doha | 1 | - | Not known |
| U.A.E. | 1971 | Dubai Al Ain Abu Dhabi | 30 | 10? | Pakistan |
| Oman | 1962 | ? | 8 | - | Not known |

5. SMALLPOX VACCINATION

During my tour, I visited many vaccination centres at the various public health units, as well as those at the MCH and other clinics. Vaccination is offered for the new born and to international travellers. Freeze-dried vaccine and bifurcated needles are being used.

The Health Ministries have been carrying out mass vaccination campaigns every four years using both mobile and static units. The school health services are well organized in every country and the school entrants are regularly vaccinated.

In all places I visited, as a routine I checked on the vaccination status of children I came across, as well as those of the chickenpox patients seen. In Bahrain, for instance, 536 school children from infant schools were examined by me and I found 92% of them with smallpox vaccination scars. In Kuwait, similarly 738 children under five years were seen and I noted that 77% of them had been vaccinated. A similar picture was discovered in the other countries. The number of vaccinations done by the six countries since 1967 are shown in Table 6.

TABLE 6
ARAB COUNTRIES OF THE GULF AREA
SMALLPOX VACCINATIONS PERFORMED 1967-1977

| Year | Country | | | | | |
|------|--------------|---------|---------|--------|---------------------|---------|
| | Saudi Arabia | Kuwait | Bahrain | Qatar | U.A.E. ^a | Oman |
| 1967 | ? | 288 366 | 135 270 | ? | ? | ? |
| 1968 | ? | 230 136 | 65 700 | 34 516 | 21 833 | ? |
| 1969 | 480 595 | 251 264 | 83 273 | 35 437 | 24 129 | ? |
| 1970 | 596 487 | 278 106 | 77 467 | 49 961 | 26 640 | ? |
| 1971 | 584 398 | 345 241 | 90 594 | 36 893 | 50 935 | ? |
| 1972 | 634 725 | 370 658 | 107 676 | 36 967 | 54 771 | ? |
| 1973 | 649 876 | 197 204 | 90 466 | 34 876 | 21 433 | ? |
| 1974 | 698 387 | 301 699 | 89 999 | 38 336 | 35 486 | ? |
| 1975 | 759 872 | 229 004 | 104 565 | 44 817 | 46 244 | 63 328 |
| 1976 | 785 390 | 203 331 | 87 472 | 48 535 | 52 725 | 83 415 |
| 1977 | 1 144 205 | 228 584 | 102 282 | 51 305 | 93 958 | 102 805 |

^a These figures include only the vaccinations done in Abu Dhabi and Al Ain medical districts. For the other 6 medical districts the figures are incomplete.

6. SPECIAL ACTIVITIES CARRIED OUT FOR CERTIFICATION OF SMALLPOX ERADICATION

6.1 General

All the countries carried out these activities during the first six months of 1978, which included chickenpox surveillance, laboratory examination of specimens from chickenpox cases of special categories, facial smallpox scar surveys and investigation of suspect smallpox cases.

6.2 Chickenpox Surveillance

Initially some of the countries could not see the significance of reporting each chickenpox case individually, particularly when they have had no smallpox for many years. It had to be explained to them how often smallpox outbreaks had been missed by misdiagnosing them as chickenpox. It was explained that if the countries could show that over a period of six months they had looked into each and every case of chickenpox among all age groups and from all parts of the country and yet had not come across any case of smallpox, it would be evidence for the Global Commission members of their smallpox-free status. The next question was why this surveillance had to be carried on for at least six months. Again it had to be elucidated that if a silent transmission had been going on in a remote area, it might take that long to come to light.

Once the countries understood the importance of this activity, they all carried out this operation more or less satisfactorily, though not all the information required was included in the individual reports of the cases.

I personally saw all chickenpox cases present at the isolation hospitals and wards at the time of my visit, and found none wrongly diagnosed; I checked more than 300 cases during my tour.

6.3 Laboratory Examination of Specimens from Chickenpox Cases of the Specified Categories

Here also, the health staff wondered why laboratory specimens should be taken when the diagnosis of chickenpox was quite plain. At the same time they were even afraid to be unnecessarily handling the scabs and vesicular smears. They were dubious of the necessity of these procedures. Again it was pointed out that it is insufficient to rely entirely on clinical diagnoses and that mistakes have been made in the past, even by experts. Accordingly, the countries thereafter cooperated and adequate numbers of specimens were collected from severe adult cases, unvaccinated cases and cases with lesions on palms and soles.

6.4 Facial Smallpox Scar Survey of Children under 10 Years of Age

This activity was very well carried out in all the countries. In most, the school health services were made responsible and covered quite a large proportion of children in the 6-10 years age group. In others, the public health staff and the staff of the health centres and clinics participated in this activity and examined children including those in the 0-5 years age group.

To start with in many countries, the health officers set apart for further investigation all children with scars, even those of old injury, impetigo or recent chickenpox. After the definition of smallpox pockmarks had been made clear (their depth, their number and size, etc.) they were more judicious. They are to be congratulated, however, for their error was on the right side and also showed that each child was indeed critically examined, thus exemplifying the thoroughness of their work.

In all countries, I personally investigated all children said to have smallpox scars and determined where and when those children were afflicted with the disease. All of them had had smallpox 7-10 years ago and except for one locally infected in 1971 in Abu Dhabi, all had occurred either in Pakistan, India or Bangladesh.

6.5 Summary

A summary by country of the number of chickenpox cases seen, laboratory examinations done, and children under 10 years of age scrutinised for smallpox scars, is shown in Table 7.

TABLE 7
ARAB COUNTRIES OF THE GULF AREA
SURVEILLANCE OF CHICKENPOX CASES JANUARY TO JULY 1978

| Country | Number of Chickenpox Cases Notified | Number of Laboratory Specimens Collected | Number of Children under 10 years of age Examined for Facial Smallpox Scars | Number of Children Found with Smallpox Scars | Source of Infection for Children with Smallpox Scars |
|--------------|-------------------------------------|--|---|--|--|
| Saudi Arabia | 831 | 160/90 | 158 075 | 0 | - |
| Kuwait | 1 766 | 78 | 80 791 | 0 | - |
| Bahrain | 3 154 | 50 | 23 169 | 1 | Pakistan in 1969 |
| Qatar | 566 | 35 | 15 742 | 0 | - |
| U.A.E. | 1 871 | 51 | 85 994 | 4 | All 7-10 yrs ago 1 India 1 Bangladesh 1 Pakistan 1 Local in 1971 |
| Oman | 480 | 39 | 67 060 | 0 | - |

6.6 Investigation of Suspect Smallpox Cases

During the six month period there has not been a single case which was suspected as, or resembled, smallpox. However, there was a rumour of two smallpox cases in April this year in Buremyi medical district of Oman. I personally investigated this rumour and found they were chickenpox cases. A detailed account of this has been given in the country report for Oman.

7. CONCLUSION

All the countries have been non-endemic since the early 1960's. Since then there have been a very few importations of the infection, either from Iraq, India, Pakistan or Bangladesh. This problem ceased when these countries themselves became free of the disease, and the last known outbreak in the area was in the United Arab Emirates during 1971.

A very good quarantine organization exists in these countries and anyone entering the country from East Africa (Somalia, Ethiopia, Djibouti and Kenya) or from either South or North Yemen has been and still is carefully scrutinised and vaccinated against smallpox irrespective of their previous vaccination status. Perhaps this measure prevented any introduction of the disease from these countries.

Chickenpox, as well as smallpox and measles, has all along been a notifiable disease in all these countries. There has been continual alertness on the part of the public health departments to the extent that whenever doubt existed regarding the diagnosis or when smallpox was suspected, specimens were taken for laboratory examination to rule out smallpox.

There has been continuous smallpox vaccination activity by the public health and the school health services staff. Ad hoc surveys showed that overall about 77% of the population were protected. All immigrants are carefully checked and vaccinated where indicated.

Recent special operations carried out for the certification of smallpox eradication, such as chickenpox surveillance, revealed no hidden foci of smallpox. Facial scar surveys indicated no evidence of the smallpox infection for the last 10 years in all but one country. The exception was the United Arab Emirates, and here also the single person with scars in Al Ain was proved to be a part of a known outbreak in that area in 1971. Since then, of course, there has been no sign of any incidence of the disease in the country.

Now that the East African countries are also free of smallpox, there appears to be no danger of importations into these countries. So, based on these facts, and also from my own personal observations and investigations, I would conclude that the countries concerned have indeed eradicated the disease.

8. ACKNOWLEDGEMENT

I should like to place on record my thanks and appreciation to the health staff of all these countries and the WHO Programme Coordinators of Saudi Arabia, Qatar, U.A.E. and Oman for their kindness, assistance and cooperation in enabling me to carry out my duties.

Also, I should like to express my gratitude to the Director, Communicable Diseases Control, Eastern Mediterranean Regional Office of WHO and the WHO Headquarters staff from the Chief of the Smallpox Eradication Unit downwards, for their unstinted support and understanding and also for all their assistance in the preparation of the required reports.

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