

# U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE 

## EPIDEMIOLOGIC NOTES AND REPORTS <br> MEASLES - 1966

## Oregon

An epidemic control program against measles in one Oregon Health Jurisdiction in the Portland area prompted two adjoining Jurisdictions to undertake similar programs for the protection of their children. This is one of the largest epidemic control measles immunization programs to date in the United States. Approximately 24,000 children from kindergarten unrough the third grades are to receive measles vaccine in the city of Portland, Washington County and Multonomah County during the 3 -week program which began November 23, 1966.

Washington County, which has reported a total of 147 measles cases during the 4 weeks ending November 19

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Revocation of Diagnosis
Rabies - Colorado $\qquad$
(MMWR, Vol. 15, Nos. 44-46), initiated the program. The neighboring Health Jurisdiction of Portland notified 5 cases for the week ending November 19. Thus, in order to abort the spreading epidemic, Portland and Multonomah County decided to participate in this cooperative effort.
(Continued on page 402)


NOTIFIABLE DISEASES OF LOW FREQUENCY

|  | Cum. |  | Cum. |
| :---: | :---: | :---: | :---: |
| Anthrax: | 6 | Botulism: Ind.-2 | 10 |
| Leptospirosis: Tenn.-1 | 61 | Trichinosis: | 90 |
| Malaria: Ky.-4, N.C.-8 | 440 | Rabies in Man: | 1 |
| Psittacosis: Pa,-2, Mass.-1 | 44 | Rubella, Congenital Syndrome: | 21 |
| Typhus, murine:. . . . . . . . . | 26 | Plague: . . . . . . . . . . . . . . . . | 5 |

## MEASLES - 1956 (Continued from front page)

The program is sponsored by the three local Health Jurisdictions, the local medical societies, the school systems, and the Oregon State Board of Health.

## (Reported by Dr. Edward Goldblatt, State Epidemiologist, Oregon State Board of Health.)

## Snohomish County, Washington

A 3 -day community-wide program to control an outbreak of measles in Snohomish County, Washington, was completed on November 30, 1966. Approximately 7,000 children from kindergarten through sixth grades were vaccinated. The urgency of this program was indicated by the 210 cases of measles reported during the 3 -week period ending November 5, 1966 (MMWR, Vol. 15, Nos. 43-45). Fmphasis was placed on availability of private physicians for immunization of younger children. The community program was conducted by the Snohomish County Health Department with support from the Snohomish County Medical Society, Washington State Department of Health, and the CDC.
(Reported by Dr. Earnest Ager, State Epidemiologist, Washington State Health Department.)
Kay County, Oklahoma
From September to November 18, 1966, 94 cases of measles were reported from Kay County, Oklahoma, most of which occurred in two of the county's four elementary schools. Approximately 600 children in the first through third grades were estimated to be susceptible. Preschool children and all susceptible school-age children in the four grammar schools were immunized in a vaccination campaign scheduled for November 28 and 29. Jet injector guns were used. A school surveillance system for measles is planned and the use of physician reporting improved so as to give an index of the success or failure ol the immunization effort.
(Reported by Dr. LeRoy Carpenter, State Epidemiologist, Oklahoma State Department of Health.)

## Rhode Island

On Sunday, January 23, 1966, the Rhode Island Medical Society and the Rhode Island Department of Health conducted the first Statewide END MEASLES campaign in which 33,853 children ( 67.2 percent of estimated susceptibles) were immunized. Another 2,589 children, were vaccinated in the 39 follow-up clinics held through June 1966, thereby increasing the number immunized to 36,442 or 70 percent of estimated susceptibles.

An intensive surveillance system including case investigation has been instituted. All physicians have been reminded that measles is reportable to the State Department of Health within 24 hours of suspected diagnosis. School nurses, nursery school directors, and the district visiting nurses have all agreed to report sus. pected cases of measles in order that each case be investigated. In an effort to discover pockets of susceptibles, all Head Start programs are being contacted and military installations are encouraged to immunize dependent's children, many of whom have moved to Rhode Island since June. Plans are underway to include measles vaccine in the routine school immunization program.

The first confirmed case of measles since June was diagnosed during the week ending November 12 in an 8 -year-old boy from Warren, Rhode Island, who had not been out of the state or had contact with another case of measles. The child had been immunized on END MEASLES Sunday in January and probably represents a case of vaccine failure. The child had not received gamma globulin either prior to or after the measles immunization.

Serological confirmation will be sought and a survey to determine measles susceptibility is to be undertaken in the child's school.
(Reported by Dr. Joseph E. Cannon, Director of Health, Rhode Island Department of Health; and an EIS Officer.)

## CURRENT TRENDS

A total of 950 cases of measles was reported for the 47 th week (ending November 26,1966 ), a decrease of 209 cases from the total of the previous week and a decrease of 464 cases from the total of 1,414 reported for the 47 th week of 1965 . The three states reporting the highest number of cases for the 47th week are Texas with 196, Washington with 97 , and Oregon with 96 . Ten states reported no measles activity.

The 24 counties reporting 10 or more cases for the 46th week (ending November 19) are in 14 different states and are listed in Table 1; the geographic distribution of
(T'ext continued on page 412)
Toble 1
Counties Reporting Highest Number of Measles Cases Week Ending November 19, 1966

| County | State | Number of Cases |
| :--- | :--- | :---: |
| Snohomish* | Washington | 89 |
| Spokane | Washington | 60 |
| Oktibbeha | Mississippi | 59 |
| Washington* | Oregon | 56 |
| King | Washington | 48 |
| Durham | North Carolina | 34 |
| Allegheny* | Pennsylvania | 27 |
| Parker | Texas | 27 |
| Pueblo | Colorado | 26 |
| Douglas* | Oregon | 25 |
| Milwaukee | Wisconsin | 24 |
| Webster | West Virginia | 23 |
| Richardson | Nebraska | 18 |
| Brown | Texas | 17 |
| Ector | Texas | 17 |
| Menifee | Kentucky | 15 |
| Ward | North Dakota | 15 |
| Rutland* | Vermont | 13 |
| Bastrop | Texas | 12 |
| Galveston | Texas | 12 |
| Wood | Texas | 12 |
| Red River | Texas | 11 |
| Lamar | Texas | 10 |
| Alameda | California | 10 |
| Total |  | 660 |

*Epidemic control measures or mass immunization programs have been instituted, are in progress, or are planned for the near future.

Figure 1
COUNTIES OR HEALTH DISTRICTS REPORTING MEASLES
WEEK ENDING NOVEMBER 19, 1966


SUMMARY OF REPORTED CASES OF INFECTIOUS SYPHILIS OCTOBER 1966 AND OCTOBER 1965


# RECOMmENDATION OF THE PUBLIC HEALTH SERVICE ADVISORY COMmITTEE ON IMMUNIZATION PRACTICES 


#### Abstract

The Public Health Service Advisory Committee on Immunization Practices meeting on October 11, 1966, issued the following recommendations on smallpox vaccination practices in the United States.


## SMALLPOX VACCINE

## Introduction

In the United States, protection of the community against smallpox through routine vaccination of infants and revaccination of older children and adults represents the principal mechanism of defense against the indigenous spread of the disease once introduced. This approach to community protection, as with all practices in preventive medicine, demands continuing reassessment of the potential risk of the disease in comparison to the efficacy and risk associated with preventive procedures.

## The Risk of Introduced Smallpox

The risk of introduction and subsequent transmission of smallpox in the United States is difficult to appraise. Although no recognized cases of smallpox have occurred in the United States since 1949, a sizable reservoir of endemic smallpox persists in Asia, Africa and South America. In 1965, over 63,000 cases were reported to the World Health Organization; undoubtedly, many times this number of cases occurred but were not recorded. A substantial proportion of smallpox cases are known to have occurred in urban centers.

Travel both by United States citizens and other nationals to and from smallpox endemic areas and this country is increasing annually. As seen recently in Europe, quarantine measures offer, at best, only partial protection against the introduction of smallpox. The traveler who has been vaccinated improperly or vaccinated with impotent vaccine or who bears a spurious vaccination certificate, is fully capable of developing the disease after passing quarantine inspection. Such, in fact, did oecur in the United States as recently as 1962: A Canadian boy in apparently good health entered the United States through New York City from Brazil with a seemingly valid vaccination certificate. He developed smallpox after arriving in Canada less than 24 hours later.

In 75 instances during the past 18 years in which smallpox has been introduced into non-endemic areas, nationals of the country involved have been responsible for over three-fourths of the introductions. Should smallpox be introduced into the United States, it is similarly most probable that a United States citizen returning from abroad would serve to introduce the disease.

Smallpox, particularly variola major, remains a highly virulent disease even with excellent medical care. The mortality rate among unvaccinated persons was 40 percent in Sweden and in England during the outbreaks of 1962-63. Since few physicians in practice today are acquainted
with clinical smallpox, it is not surprising that in several recent European outbreaks the disease remained unrecognized until the third generation of cases, or even later. During a 1966 outbreak in England, the diagnosis of smallpox was not made until the fourth cycle of transmission and 23 cases had already occurred, more than 10 weeks after the first identifiable case. Should the disease be introduced into the United States, a similar course of events could occur.

## Smallpox Vaccination - Efficacy and Risks

The efficacy of smallpox vaccine has never been precisely measured in controlled trials. It is, however, generally agreed that vaccination with fully potent vaccine confers a high level of protection for at least three years and provides substantial but waning immunity for 10 years or more. Protection against a fatal outcome of the disease appears to extend over a longer period, perhaps for decades.

Smallpox vaccination, as with other medical procedures, is associated with a definite, measurable risk of morbidity and, rarely, death. A comprehensive national survey to ascertain the frequency of complications associated with vaccination in the United States during 1963 has recently been completed. ${ }^{1}$ Among more than $6,000,000$ primary vaccinees and nearly $8,000,000$ revaccinees and their contacts, 12 cases of encephalitis following vaccination, 9 cases of vaccinia necrosum, and 108 cases of eczema vaccinatum occurred. Seven persons died. A substantial number of less serious complications, some of which resulted in hospitalization, were also recorded. All deaths and virtually all complications occurred among those vaccinated for the first time.

Furthermore, from these same data, it appeared that over half of the complications could have been prevented had contraindications to vaccination been more closely observed. Additionally, it was noted that complication rates were at least twice as high among children under one year of age as among other children.

If the routine practice of vaccinating infants and young children were to be terminated, consideration would need to be given to the consequence of the later primary vaccination of a large number of adults requiring protection by virtue of military service, travel abroad, or employment in medical or allied health professions. (Over half of all cases occurring following introduction of smallpox to non-endemic areas have been transmitted in the hospital setting.) It is estimated that these three
categories would involve between one and two million primary vaccinations annually.

Available data suggest that if primary vaccination were delayed until adulthood and administered to individuals faced with potential smallpox exposure, the number and seriousness of complications occurring each year would, in fact, be considerable greater than at present.

## Other Prophylactic Agents

In recent years, Vaccinia Immune Globulin and certain antiviral compounds have been tested and reported by some to be effective in conferring protection against smallpox when administered shortly after exposure to the disease. At present, however, none appears to be a satisfactory alternative to vaccination. And most important, none confers protection lasting more than a few weeks. Thus, unless the first introduced case can be promptly and correctly diagnosed and all contacts quickly identified and treated, interruption of subsequent transmission of the disease by using these materials is virtually impossible. As previously pointed out, prompt diagnosis of the first introduced case has been the exception rather than the rule in recent European outbreaks.

Of added practical importance are the association of considerable gastrointestinal toxicity with the antiviral compounds and the critically short supply of Vaccinia Immune Globulin. In brief, therefore, none of these prophylactic agents is suitable for mass use at the time of a real or potential outbreak.

## Conclusions and Recommendations

In recent years, international travel has increased substantially while the reservoir of endemic smallpox has changed but little. Correspondingly, the potential for the introduction of smallpox into the United States has, if anything, increased.

The 1966 World Health Assembly agreed to embark upon an intensive 10 -year smallpox program. Based upon the effectiveness of vaccination campaigns in many of the developing countries, there is every reason to anticipate the success of this program. Eradication of endemic smallpox represents the most direct attack upon the problem and the only sure means for protecting the United States.

Until eradication is achieved or, at least, nears realization, vaccination, although not wholly without risk, clearly represents the only currently practicable approach for community protection in the United States. Considering the comparative risks of smallpox to the United States contrasted with the risks of vaccination, it is therefore important, at this time, to continue the present practice of widespread, routine smallpox vaccination in early childhood with subsequent revaccination.

[^0]
## Recommendations for Smallpox Vaccination

The following smallpox vaccination practices are recommended for the United States: (See Footnote*)

1. Time of Vaccination

Primary Vaccination
a. During the second year of life (i.e., between 1st. and 2nd. birthdays).
b. At any age under conditions of exposure or foreign travel.

## Revaccination

a. At time of entry into elementary school.
b. At three-year intervals for:

1) Persons who conceivably might be exposed inendemic or potentially endemic areas by virtue of international travel.
2) Persons likely to be exposed by newly introduced infection into the United States, particularly:
a) Hospital personnel, including physicians, nurses, attendants, laboratory and laundry workers.
b) Other medical, public health, and allied professions.
c) Morticians and other mortuary workers.
c. At approximately 10 -year intervals for all others.

## 7. Site of Vaccination

On the skin over the insertion of the deltoid muscle or on the posterior aspect of the arm over the triceps muscle.
3. Methods of Vaccination

## Multiple Pressure Method ${ }^{2}$

A small drop of vaccine is placed on the $d r y$, cleansed skin and a series of pressures is made within an area about $1 / 8^{\prime \prime}$ in diameter with the side of a sharp, sterile needle held tangentially to the skin. The pressures are made with the side of the needle. For primary vaccination, 10 pressures are adequate; for revaccination, 30 pressures should be made. The remaining vaccine should be wiped off with dry, sterile gauze. Preferably, no dressing should be applied to the site.
Other Vaccination Techniques
Vaccination may be performed with other devices shown to be equally effective in assuring takes.
Jet Injection Method
Using vaccine specifically manufactured for this purpose, the recommended dose is inoculated intradermally with a jet injection apparatus. Excess vaccine should be wiped off with dry, sterile gauze. Preferably, no dressing should be applied to the site.
that "If a vaccinator is of the opinion that vaccination is contraindicated on medical grounds, he should provide the persons with written reasons underlying that opinion, which health authorities may take into account." ${ }^{3}$

## 4. Interpretation of Responses*

The vaccination site should be inspected 6 to 8 days after vaccination. The response should be interpreted as follows:

## Primary Vaccination

A primary vaccination which is successful should show a typical Jennerian vesicle. If none is observed, vaccination procedures should be checked and vaccination repeated with another lot of vaccine until a successful result is obtained.

## Revaccination

Following revaccination, two responses are defined by the WHO Expert Committee on Smallpox eliminating use of older terms such as "accelerated" and "immune": ${ }^{2}$
a. "Major reaction"'

A vesicular or pustular lesion or an area of definite palpable induration or congestion surrounding a central lesion which may be a crust or ulcer. This reaction indicates that virus multiplication has most likely taken place and that the revaccination is successful.
b. "Equivocal reaction"

Any other reaction should be regarded as equivocal. These responses may be the consequence of immunity adequate to suppress virus multiplication or may represent only allergic reactions to an inactive vaccine. If an equivocal reaction is observed, revaccination procedures should be checked and revaccination repeated with another lot of vaccine.
5. Types of Vaccine

Smallpox vaccine is presently available both in the glycerinated and the lyophilized form. Both forms, when properly preserved, afford excellent protection. The glycerinated form requires constant refrigeration at all stages in its transport and storage at temperatures recommended by the manufacturer. Comparatively minor storage difficulties may reduce its potency sufficiently to decrease efficacy in vaccination and particularly in revaccination. Even in excellent medical facilities, the glycerinated vaccine is often stored under improper conditions. Use of the much more stable lyophilized vaccine would insure more consistently effective vaccination. Due care must be exercised to provide proper handling of the lyophilized vaccine after reconstitution as described by the manufacturer.
6. Contraindications to Vaccination
a. Eczema and other forms of chronic dermatitis in the individual to be vaccinated or in a household contact. If vaccination is required

[^1]for an individual with dermatitis because of potential exposure in an endemic area. Vaccinia Immune Globulin should be administered to the affected individual at the same time as the vaccine. If there is real need to vaccinate an individual who may create a hazard for a household contact with dermatitis, consideration should be given to separation of the vaccinee and his contact until a crust has developed.
b. Pregnancy. Vaccinia virus may, on occasion, cross the placental barrier during any stage of pregnancy and infect the fetus. Virtually all cases of fetal vaccinia have followed primary vaccination. If vaccination is indicated because of potential exposure in an endemic area, Vaccinia Immune Globulin should generally be given simultaneously with the vaccine, particularly if she is undergoing primary vaccination.
c. Patients with leukemia, lymphoma, and other reticuloendothelial malignancies or dysgamma globulinemia or those under therapy with immunosuppressive drugs such as steroid and antimetabolites or receiving ionizing radiation. If exposure should, by chance, occur, or if vaccination is absolutely essential, Vaccinia Immune Globulin should be administered.
7. Vaccinia Immune Globulin (VIG) (See Appendix)
a. Prophylaxis $-0.3 \mathrm{ml} . / \mathrm{kg}$. by the intramuscular route.
b. Treatment $-0.6 \mathrm{ml} / \mathrm{kg}$. by the intramuscular route:

1) In eczema vaccinatum, vaccinia necrosum or auto-inoculation vaccinia of the eye, VIG may be effective.
2) For severe cases of generalized vaccinia, VIG may be helpful in treatment. Such cases, however, almost invariably have a favorable outcome.
Note: For postvaccinal encephalitis, VIG is of no value.
8. Thiosemicarbazones

Certain of the thiosemicarbazone derivatives are reported by some to show a short-term protective effect against smallpox and possibly a therapeutic effect in individuals with severe vaccinal complications. These are experimental drugs and are not available for general use; their potential usefulness remains to be established.

[^2]
# APPENDIX <br> Committee of American Red Cross Volunteer Consultants for the Distribution of V accinia Immune Globulin <br> VIG may be obtained within a few hours from any of the listed Regional <br> Blood Centers of the American Red Cross following approval by a consultant 

Telephone

1. Moses Grossman, M.D.

University of California
San Francisco General Hospital
(Ward 83) Room 334)
San Francisco, California 94110
Alternate: Sidney Sussman, M.D.
(Same Address)
2. Horace Hodes, M.D.

The Mount Sinai Hospital
New York, New York 10029
Alternate: Eugene Ainbender, M.D.
(Same Address)
3. C. Henry Kempe, M.D.

University of Colorado School of Medicine
4200 East Ninth Avenue
Denver, Colorado 80220
Alternate: Vincent A. Fulginiti, M.D.
(Same Address)
Alternate: Henry K. Silver, M.D.
(Same Address)
3. James H. Pert, M.D.

The American National Red Cross
Washington, D.C. 20006
Alternate: Robert H. Parrott, M.D.
The Children's Hospital of the
District of Columbia
2125 13th Street, N.W.
Washington, D.C. 20009
5. Ralph V. Platou, M.D.

Tulane University School of Medicine
1430 Tulane Avenue
New Orleans, Louisiana 70112
Alternate: Margaret H.D. Smith, M.D.
(Same Address)
Alternate: Norman C. Woody, M.D.
(Same Address)
6. Irving Schulman, M.D.

University of Illinois College of Medicine 840 Wood Street
Chicago, Illinois 60612
Alternate: Marvin Cornblath, M.D.
(Same Address)
7. Paul F. Wehrle, M.D.

Los Angeles County General Hospital
1200 North State Street
Los Angeles, California 90033
Alternate: John M. Leedom, M.D.
(Same Address)
Alternate: Allen W. Mathies, M.D.
(Same Address)

| Office | Home |
| :--- | :--- |
| (415) $648-8200$, <br> Ext. 441 | (415) 681-0475 |
| (Same) | (415) $564-8296$ |
| (212) $876-1158$, <br> or $876-1000$, <br> Ext. 732 or 640 <br> (Same) | (516) $627-3691$ |
| (303) $399-1211$ | (914) $762-1148$ |


| (303) 399-1211, | (303) | 355-1032 |
| :---: | :---: | :---: |
| Ext. 7558 |  |  |
| (303) 399-1211. | (303) | 355-7990 |
| Ext. 7558 |  |  |
| (202) 857-3543 | (301) | 656-8375 |
| or 737-8300, |  |  |
| Ext. 543 |  |  |
| (202) 387-4220, | (301) | 365-0810 |
| Ext. 280 |  |  |

(504) 523-3381 (504) 833-8301

Ext. 531
(504) 523-3381,
(504) 861-4304

Ext. 380
(504) 523-3381, (504) 899-9049

Ext. 531
(312) 663-6711
(312) 835-0160

Edward L. Buescher, Lt. Col., M.C. Distribution to the Armed Forces
Walter Reed Army Medical Center
Washington, D.C. 20012
Alternate: Malcolm S. Artenstein, M.D.
(Same Address)
(213) 225-3115,
(213) 288-1597

Ext. 7285
(213) 225-3115,
(213) 799-7006

Ext. 2231

| (202) $576-3757$ <br> or $723-1000$, <br> Ext. 3757 <br> (202) $576-3478$ | (301) $588-8835$ |
| :--- | :--- |
| or $723-1000$, |  |
| Ext 3478 |  |

CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES
FOR WEEKS ENDED
NOVEMBER 26, 1966 AND NOVEMBER 27, 1965 (47th WEEK)

| AREA | ```ASEPTIC MENINGITIS``` |  | BRUCELLOSIS | ENCEPHALITIS |  |  | DIPHTHERIA |  | HEPATITIS |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Primary including unsp. cases | PostInfectious | Serum | Infectious including unsp. cases |  |  | Both Types |
|  | 1966 | 1965 |  | 1966 | 1966 | 1965 | 1966 | 1966 | 1965 | 1966 | 1966 | 1965 |
| UNITED STATES... | 41 | 48 | 1 | 24 | 17 | 9 | 12 | 3 | 30 | 694 | 575 |
| NEW ENGLAND........... | 1 | 2 | - | 1 | 1 | - | - | - | - | 48 | 27 |
| Maine.............. | 1 | - | - | - | - | - | - | - | - | 11 | 5 |
| New Hampshire...... | - | - | - | - | - | - | - | - | - | 1 | 2 |
| Vermont............ | - | - | - | - | - | - | - | - | - | - | 1 |
| Massachusetts...... | - | - | - | 1 | - | - | - | - | - | 15 | 14 |
| Rhode Island....... | - | 2 | - | - | 1 | - | - | - | - | 11 | 1 |
| Connecticut........ | - | - | - | - | 1 | - | - | - | - | 10 | 4 |
| MIDDLE ATLANTIC, . . . | 15 | 5 | - | 5 | 3 | I | 1 | - | 12 | 101 | 87 |
| New York City...... | 1 | - | - | 1 | 2 | - | 1 | - | 9 | 17 | 26 |
| New York, Up-State. | 7 | 5 | - | 1 | - | 1 | - | - | 1 | 30 | 26 |
| New Jersey......... | 7 | - | - | 3 | 1 | - | - | - | 1 | 33 | 9 |
| Pennsylvania....... | - | - | - | - | - | - | - | - | 1 | 21 | 26 |
| EAST NORTH CENTRAL... | 3 | 8 | - | 3 | 2 | - | - | 1 | 1 | 103 | 129 |
| Ohio............... | 1 | 3 | - | 1 | 2 | - | - | 1 | - | 18 | 33 |
| Indiana............ | - | 1 | - | 1 | - | - | - | - | - | 11 | 11 |
| Illinois.......... | - | 1 | - | 1 | - | - | - | - | - | 9 | 16 |
| Michigan........... | 1 | 3 | - | - | - | - | - | - | 1 | 55 | 60 |
| Wisconsin.......... | 1 | - | - | - | - | - | - | - | - | 10 | 9 |
| WEST NORTH CENTRAL... | 2 | 4 | 1 | 3 | - | 1 | - | 1 | - | 29 | 10 |
| Minnesota.......... | 2 | 4 | - | 2 | - | 1 | - | - | - | 1 | 2 |
| Iowa................ | - | - | 1 | 1 | - | - | - | - | - | 10 | - |
| Missouri............ | - | - | - | - | - | - | - | - | - | 16 | 2 |
| North Dakota....... | - | - | - | - | - | - | - | - | $\sim$ |  | 1 |
| South Dakota........ | - | - | - | - | - | - | - | 1 | - | - | - |
| Nebraska............ | - | - | - | - | - | - | - | - | - | - | 1 |
| Kansas............. | - | - | - | - | - | - | - | - | - | 2 | 4 |
| SOUTH ATLANTIC....... | 4 | 3 | - | 3 | - | 1 | 3 |  |  | 144 | 45 |
| Delaware........... | 1 | 3 | - | - | - | - | - | - | - | 1 | - |
| Maryland........... | - | - | - | 2 | - | - | - | - | 1 | 16 | 6 |
| Dist. of Columbia.. | - | - | - | - | - | - | - | - | - | 3 | 1 |
| Virginia............ | - | 1 | - | 1 | - | - | - | - | - | 9 | 21 |
| West Virginia...... | - | - | - | - | - | - | - | - | - | 4 | 4 |
| North Carolina..... | - | - | - | - | - | - | - | - | 1 | 6 | 3 |
| South Carolina..... | - | - | - | - | - | - | - | 1 | - | - | 2 |
| Georgia............. | - | - | - | - | - | - | 3 | - | - | 101 | 1 |
| Florida............ | 3 | 2 | - | - | - | 1 | - | - | - | 4 | 7 |
| EAST SOUTH CENTRAL... | 3 | - | - | - | 3 | - | - | - | 1 | 33 | 39 |
| Kentucky............ | - | - | - | - | 2 | - | - | - | - | 10 | 13 |
| Tennessee........... | 2 | - | - | - | 1 | - | - | - | 1 | 11 | 16 |
| Alabama............. | 1 | - | - | - | - | - | - | - | - | 5 | 5 |
| Mississippi........ | - | - | - | - | - | - | - | - | - | 7 | 5 |
| WEST SOUTH CENTRAL... | - | 1 | - | 1 | 1 | - | 4 | - | 2 | 25 | 31 |
| Arkansas........... | - | - | - | - | - | - | - | - | - | 2 | 7 |
| Louisiana.......... | - | - | - | 1 | 1 | - | 3 | - | 2 | 4 | 6 |
| Oklahoma........... | - | - | - | 1 | - | - | - | - | - | 3 | - |
| Texas............... | - | 1 | - | - | - | - | 1 | - | - | 16 | 18 |
| MOUNTAIN. . . . . . . . . . . | - | 3 | - | - | 4 | - | - | - | - | 50 | 33 |
| Montana............ | - | - | - | - | - | - | - | - | - | 3 | 5 |
| Idaho.............. | - | - | - | - | - | - | - | - | - | 10 | 1 |
| Wyoming............ | - | - | - | - | - | - | - | - | - | z | - |
| Colorado........... | - | - | - | - | - | - | - | - | - | 5 | 11 |
| New Mexico......... | - | - | - | - | - | - | - | - | - | 20 | 6 |
| Arizona............. | - | - | - | - | - | - | - | - | - | 7 | 7 |
| Utah................. | - | 3 | - | - | 4 | - | - | - | - | 3 | 3 |
| Nevada.............. | - | - | - | - | - | - | - | - | - | - | - |
| PACIFIC.............. | 13 | 22 | - | 8 | 3 | 6 | 4 | - | 12 | 161 | 174 |
| Washington.......... | - | 2 | - | - | - | - | 3 | - | 12 | 8 | 29 |
| Oregon............... | - | - | - | 2 | - | - | - | - | - | 37 | 6 |
| Alaska................ | 13 | 20 | - | 6 | 3 | 6 | 1 | - | 12 | 114 | 127 |
| Hawai1................ | - | - | - | - | - | - | - | - | - | - | 10 |
| Puerto Rico.......... | - | - | - | - | 1 | - | - | - | - | 23 | 20 |

## CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES <br> FOR WEEKS ENDED <br> NOVEMBER 26, 1966 AND NOVEMBER 27, 1965 (47th WEEK) - CONTINUED

| AREA | MEASLES (Rubeola) |  |  | MENINGOCOCCAL INFECTIONS, TOTAL |  |  | POLIOMYELITIS |  |  |  | RUBELLA |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Total | Paralytic |  |  |
|  | 1966 | Cumulative |  |  |  |  | 1966 | Cumulative |  | 1966 | 1965 | 1966 | $\begin{gathered} \text { Cumulative } \\ 1966 \end{gathered}$ | 1966 |
|  |  | 1966 | 1965 | 1966 | 1965 |  |  |  |  |  |  |
| UNITED STATES... | 950 | 196,372 | 250,745 | 57 | 3,128 | 2,732 | 2 | 2 | 2 | 85 | 292 |  |  |  |
| new england........... | 18 | 2,491 | 37,145 | 3 | 144 | 142 | - | - | - | - | 44 |  |  |  |
| Maine. | 6 | 274 | 2,899 | - | 12 | 18 | - | - | - | - | 9 |  |  |  |
| New Hampshire. | - | 80 | 383 | - | 9 | 9 | - | - | - | - | - |  |  |  |
| Vermont. . . | 1 | 317 | 1,375 | - | 4 | 8 | - | - | - | - | - |  |  |  |
| Massachusetts. | 6 | 821 | 19,357 | 2 | 61 | 53 | - | - | - | - | 7 |  |  |  |
| Rhode Is land. | - | 73 | 3,951 | - | 17 | 16 | - | - | - | - | 1 |  |  |  |
| Connecticut........ | 5 | 926 | 9,180 | 1 | 41 | 38 | - | - | - | - | 27 |  |  |  |
| Middle atlantic...... | 49 | 18,348 | 16,222 | 16 | 404 | 364 | - | - | - | - | 15 |  |  |  |
| New York City...... | 4 | 8,354 | 2,870 | 2 | 64 | 59 | - | - | - | - | 8 |  |  |  |
| New York, Up-State. | 11 | 2,603 | 4,285 | 1 | 106 | 105 | - | - | - | - | 7 |  |  |  |
| New Jersey......... | 21 | 1,934 | 3,047 | 9 | 118 | 96 | - | - | - | - | - |  |  |  |
| Pennsylvania....... | 13 | 5,457 | 6,020 | 4 | 116 | 104 | - | - | - | - | - |  |  |  |
| EAST NORTH CENTRAL... | 143 | 69,831 | 58,798 | 4 | 493 | 413 | - | - | - | 7 | 81 |  |  |  |
| Ohio............... | 12 | 6,415 | 8,996 | 2 | 144 | 114 | - | - | - | 2 | 12 |  |  |  |
| Indiana. | 8 | 5,782 | 2,187 | - | 85 | 47 | - | - | - | 1 | 5 |  |  |  |
| Illinois. | 16 | 11,473 | 3,215 | - | 87 | 110 | - | - | - | 3 | 10 |  |  |  |
| Michigan. | 44 | 14,924 | 27,157 | - | 127 | 95 | - | - | - | 1 | 19 |  |  |  |
| Wisconsin.......... | 63 | 31,237 | 17,243 | 2 | 50 | 47 | - | - | - | - | 35 |  |  |  |
| WEST NORTH CENTRAL... | 26 | 9,039 | 17,111 | 3 | 161 | 134 | - | - | - | 1 | 13 |  |  |  |
| Minnesota. | 4 | 1,669 | 759 | - | 35 | 32 | - | - | - | 1 | - |  |  |  |
| Iowa. . | 2 | 5,363 | 9,187 | - | 22 | 12 | - | - | - | - | 9 |  |  |  |
| Mis souri. | - | 537 | 2,638 | 2 | 63 | 53 | - | - | - | - | - |  |  |  |
| North Dakota....... | 12 | 1,274 | 3,950 | - | 11 | 12 | - | - | - | - | 4 |  |  |  |
| South Dakota....... | - | 40 | 115 | - | 5 | 3 | - | - | - | - | - |  |  |  |
| Nebraska........... | 8 | 156 | 462 | - | 9 | 10 | - | - | - | - | - |  |  |  |
| Kansas............. | NN | NN | NN | 1 | 16 | 12 | - | - | - | - | - |  |  |  |
| SOUTh atlantic....... | 122 | 15,818 | 26,117 | 11 | 531 | 513 | 1 | - | 1 | 2 | 26 |  |  |  |
| Delaware........... | - | 262 | 509 | - | 5 | 10 | - | - | - | - | 1 |  |  |  |
| Maryland.. | - | 2,121 | 1,205 | - | 49 | 50 | - | - | - | - | 7 |  |  |  |
| Dist. of Columbia.. | - | 388 | 94 | - | 14 | 11 | - | - | - | - | - |  |  |  |
| Virginia........... | 22 | 2,230 | 4,185 | - | 63 | 68 | - | - | - | - | 4 |  |  |  |
| West virginia...... | 38 | 5,495 | 14,435 | - | 41 | 26 | 1 | - | 1 | 1 | 2 |  |  |  |
| North Carolina..... | 42 | 601 | 410 | 1 | 133 | 109 | - | - | - | - | - |  |  |  |
| South Carolina..... | 1 | 661 | 1,120 | 1 | 54 | 64 | - | - | - | - | - |  |  |  |
| Georgia............. | 2 | 240 | 626 | 9 | 77 | 60 | - | - | - | 1 | - |  |  |  |
| Florida............ | 17 | 3,820 | 3,533 | - | 95 | 115 | - | - | - | - | 12 |  |  |  |
| EAST SOUTH CENTRAL... | 71 | 20, 168 | 14,826 | 2 | 269 | 208 | - | - | - | 4 | 28 |  |  |  |
| Kentucky............ | 4 | 4,777 | 3,010 | 2 | 95 | 79 | - | - | - | - | 19 |  |  |  |
| Tennessee.......... | 52 | 12,540 | 8,324 | - | 92 | 67 | - | - | - | - | 9 |  |  |  |
| Alabama.. | 14 | 1,752 | 2,347 | - | 58 | 37 | - | - | - | 1 | - |  |  |  |
| Mississippi........ | 1 | 1,099 | 1,145 | - | 24 | 25 | - | - | - | 3 | - |  |  |  |
| WEST SOUTH CENTRAL... | 199 | 25,748 | 31,553 | 2 | 418 | 340 | 1 | - | 1 | 68 | 1 |  |  |  |
| Arkansas........... | 3 | - 982 | 1,088 | - | 36 | 18 | - | - | - | 1 | - |  |  |  |
| Louisiana. . . . . . . . | - | 99 | 116 | 2 | 159 | 186 | - | - | - | 1 | - |  |  |  |
| Oklahoma........... | - | 538 | 226 | - | 21 | 21 | - | - | - | 1 | - |  |  |  |
| Texas.............. | 196 | 24,129 | 30,123 | - | 202 | 115 | 1 | - | 1 | 65 | 1 |  |  |  |
| mountain. . . . . . . . . . | 58 | 12,388 | 20,479 | - | 94 | 98 | - | - | - | - | 18 |  |  |  |
| Montana. | 8 | 1,890 | 3,842 | - | 5 | 2 | - | - | - | - | - |  |  |  |
| Idaho............... | 7 | 1,671 | 2,963 | - | 5 | 13 | - | - | - | - | 7 |  |  |  |
| Wyoming. . . . . . . . . . | 2 | 219 | 858 | - | 6 | 5 | - | - | - | - | - |  |  |  |
| Colorado........... | 16 | 1,392 | 5,916 | - | 49 | 27 | - | - | - | - | 1 |  |  |  |
| New Mexico......... | 6 | 1,159 | 687 | - | 10 | 11 | - | - | - | - | - |  |  |  |
| Arizona............. | 10 | 5,345 | 1,398 | - | 13 | 20 | - | - | - | - | 5 |  |  |  |
|  | 9 | 657 | 4,601 | - | 1 | 17 | - | - | - | - | 5 |  |  |  |
| Nevada.............. |  | 55 | 214 | - | 5 | 3 | - | - | - | - | - |  |  |  |
| PACIFIC.............. | 264 | 22,541 | 28,494 | 16 | 614 | 520 | - | 2 | - | 3 | 66 |  |  |  |
| Washington......... | 97 | 4,536 | 7,433 | 4 | 48 | 41 | - | - | - | 2 | 35 |  |  |  |
| Oregon.............. | 96 | 2,213 | 3,405 | 3 | 40 | 36 | - | - | - | - | 13 |  |  |  |
| California......... | 53 | 15,028 | 13,408 | 9 | 504 | 417 | - | 2 | - | 1 | 17 |  |  |  |
| Alaska............ | 14 4 | 606 158 | 203 4,045 | - | 18 | 18 | - | - | - | - | 1 |  |  |  |
| Puerto Rico.......... | 55 | 3,285 | 2,759 | - | 16 | 11 | - | - | - | 1 | 1 |  |  |  |

CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES
FOR WEEKS ENDED
NOVEMBER 26, 1966 AND NOVEMBER 27, 1965 (47th WEEK) - CONTINUED

| AREA | STREPTOCOCCAL SORE THROAT \& SCARLET FEVER | TETANUS |  | TULAREMIA |  | TYPHOID |  | TYPHUS FEVER TICK-BORNE (Rky. Mt. Spotted) |  | RABIES IN ANIMALS |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1966 | 1966 | $\begin{aligned} & \text { Cum. } \\ & 1966 \end{aligned}$ | 1966 | $\begin{aligned} & \text { Cum. } \\ & 1966 \end{aligned}$ | 1966 | $\begin{aligned} & \text { Cum. } \\ & 1966 \end{aligned}$ | 1966 | $\begin{aligned} & \hline \text { Cum. } \\ & 1966 \end{aligned}$ | 1966 | Cum. 1966 |
| UNITED STATES... | 8,263 | 4 | 175 | 1 | 160 | 2 | 347 | 2 | 241 | 57 | 3,663 |
| NEW ENGLAND. . . . . . . . . | 1,381 | - | 4 | - | 1 | - | 13 | - | 3 | 1 | 84 |
| Maine............... | 49 | - | - | - | - | - | - | - | - | - | 25 |
| New Hampshire...... | 15 | - | - | - | - | - | - | - | - | 1 | 29 |
| Vermont. . . . . . . . . . | - | - | - | - | - | - | - | - | - | - | 25 |
| Massachusetts...... | 167 | - | 2 | - | 1 | - | 9 | - | 1 | - | 4 |
| Rhode Island....... | 78 | - | - | - | - | - | - | - | - | - | - |
| Connecticut........ | 1,072 | - | 2 | - | - | - | 4 | - | 2 | - | 1 |
| MIDDLE ATLANTIC...... | 144 | - | 14 | - | - | - | 57 | 1 | 47 | 8 | 217 |
| New York City...... | 10 | - | 5 | - | - | - | 25 | - | - | - | 1 |
| New York, Up-State. | 122 | - | 2 | - | - | - | 12 | - | 13 | 5 | 200 |
| New Jersey......... | NN | - | 2 | - | - | - | 8 | - | 15 | - | - |
| Pennsylvanie....... | 12 | - | 5 | - | - | - | 12 | 1 | 19 | 3 | 16 |
| EAST NORTH CENTRAL... | 1,157 | - | 20 | - | 20 | 1 | 42 | - | 19 | 2 | 470 |
| 0hio................ | 103 | - | 4 | - | 3 | 1 | 21 | - | 9 | - | 197 |
| Indiana...... . . . . . | 110 | - | 4 | - | 10 | - | 4 | - | - | 2 | 109 |
| Illinois........... | 133 | - | 4 | - | 6 | - | 5 | - | 10 | - | 70 |
| Michigan........... | 228 | - | 6 | - | - | - | 6 | - | - | - | 41 |
| Wisconsin.......... | 573 | - | 2 | - | 1 | - | 6 | - | - | - | 53 |
| WEST NORTH CENTRAL... | 476 | - | 15 | - | 19 | - | 33 | - | 4 | 18 | 838 |
| Minnesota.......... | 10 | - | 3 | - | 1 | - | 1 | - | - | 5 | 200 |
| Iowa................ | 236 | - | 2 | - | - | - | 5 | - | - | - | 155 |
| Missouri........... | 7 | - | 8 | - | 10 | - | 17 | - | 3 | 3 | 244 |
| North Dakota....... | 147 | - | - | - | - | - | 1 | - | . | 1 | 49 |
| South Dakota....... | 17 | - | - | - | 4 | - | - | - | - | 6 | 103 |
| Nebraska........... | 1 | - | 1 | - | 2 | - | 2 | - | - | 3 | 26 |
| Kansas............ | 58 | - | 1 | - | 2 | - | 7 | - | 1 | - | 61 |
| SOUTH ATLANTIC...... | 870 | 1 | 33 | - | 12 | 1 | 67 | 1 | 110 | 9 | 467 |
| Delaware........... | 17 | - | - | - | - | - | 1 | - | 2 | - | - |
| Maryland........... | 71 | - | 3 | - | 2 | 1 | 12 | - | 26 | - | 3 |
| Dist. of Columbia.. | 16 | - | - | - | - | - | 2 | - | - | - | - |
| Virginia........... | 272 | - | 6 | - | 2 | - | 16 | - | 31 | 4 | 238 |
| West Virginia...... | 288 | - | - | - | 1 | - | 1 | - | - | 2 | 56 |
| North Carolina. . . . | 29 | - | 4 | - | 3 | - | 6 | - | 27 | - | 4 |
| South Carolina,.... | 22 | - | 2 | - | 1 | - | 13 | - | 5 | - | - |
| Georgia............. | 4 | 1 | 8 | - | 3 | - | 4 | 1 | 19 | 1 | 100 |
| Florida............ | 151 | - | 10 | - | - | - | 12 | $-$ |  | 2 | 66 |
| EAST SOUTH CENTRAL... | 1,087 | 1 | 25 | - | 24 | - | 43 | - | 43 | 8 | 465 |
| Kentucky. . . . . . . . . . | 24 | - | 2 | - | 2 | - | 10 | - | 9 | 3 | 110 |
| Tennessee.......... | 937 | 1 | 7 | - | 14 | - | 22 | - | 25 | 4 | 313 |
| Alabama............ | 95 | - | 8 | - | 4 | - | 6 | - | 7 | - | 20 |
| Mississippi........ | 31 | - | 8 | - | 4 | - | 5 | - | 2 | 1 | 22 |
| WEST SOUTH CENTRAL... | 481 | - | 42 | 1 | 72 | - | 34 | - | 10 | 10 | 728 |
| Arkansas............ | 1 | - | 4 | 1 | 55 | - | 4 | - | 2 | - | 80 |
| Louisiana........... | - | - | 10 | - | 4 | - | 10 | - |  | 1 | 50 |
| Oklahoma. . . . . . . . . . | 45 435 | - | 3 | - | 7 | - | 9 | - | 7 | 4 | 180 |
| Texas.............. | 435 | - | 25 | - | 6 | - | 11 | - | I | 5 | 418 |
| Mountain. . . . . . . . . . . | 1,021 | - | 2 | - | 9 | - | 17 | - | 4 | - | 95 |
| Montana............ | 37 | - | - | - | 2 | - | - | - | - | - | 7 |
| Idaho............... | 94 | - | - | - | - | - | - | - | - | - | 7 |
| Wyoming. . . . . . . . . . . | 92 | - | - | - | 3 | - | - | - | 1 | - | - |
| Colorado. . . . . . . . . . | 388 | - | 2 | - | - | - | 4 | - | 2 | - | 18 |
| New Mexico. . . . . . . . | 241 | - | - | - | 1 | - | 2 | - | 1 | - | 16 |
| Arizona............. | 66 | - | - | - | 1 | - | 5 | - | - | - | 42 |
| Utah................ | 103 | - | - | - | 2 | - | 5 | - | - | - | 3 |
|  | - | - | - | - | - | - | 1 | - | - | - | 9 |
| PACIFIC............... | 1,646 | 2 | 20 | - | 3 | - | 41 | - | 1 | 1 | 299 |
| Washington......... | 540 |  | - | - |  | - | 11 | - | 1 | 1 | 15 |
| Oregon. . . . . . . . . . . | - 46 |  | 1 | - | - | - | 1 | - | - | - | 4 |
| California. . . . . . . . | 1,011 16 | 2 | 19 | - | 3 | - | 27 | - | 1 | 1 | 280 |
| Hawat1., . . . . . . . . . . . . . | $\begin{array}{r}16 \\ 33 \\ \hline\end{array}$ | - | - | - | - | - | 2 | - | - | - | - |
| Puerto Rico.......... | 5 | - | 53 | - | - | - | 17 | - | - | - | 18 |

(By place of occurrence and week of filing certificate. Excludes fetal deaths)


MEASLES－ 1966 （Continued from page 402）
counties and health districts reporting one or more cases of measles for the week is shown in Figure 1．This is the largest number of counties reporting 10 or more cases for one week so far in the 1966－67 epidemiological year． Snohomish and Spokane Counties in Washington notified 89 and 60 cases respectively，the highest numbers for the 46 ch week．Texas has the most counties reporting 10 or more cases．
（Reported by the Childhood Viral Diseases Unit，Epide－ miology Branch，CDC．）

## REVOCATION OF DIAGNOSIS RABIES－Colorado

The original death certificate of an 11－year－old girl who died in Denver，Colorado，on April 2，1966，stated that the cause of death was encephalitis，acute，rabies suspected（MMWR，Vol．15，No．16）．The Laboratory of the Colorado State Department of Public Health had reported on April 3 that the fluorescent antibody test for rabies on brain tissue from the case was positive．Ac－ cordingly，an extensive rabies control program was conducted in the area where the case was believed to have been exposed．

Further laboratory studies were undertaken in the Colorado State Department of Public Health Laboratory and elsewhere．Mouse inoculation failed to reveal rabies virus．Therefore，the diagnosis has not been confirmed． On the death certificate，the cause of death has been corrected to＂encephalopathy，acute，etiology undeter－ mined．＂The case has been deleted from the cumulative total of human rabies cases in 1966.
（Reported by Dr．C．S．Mollohan，Chief，Epidemiology Section，Colorado State Department of Public Health．）

ERRATUM，Vol．15，No．45，p． 386
The following information was omitted in the article entitled＂Salmonellosis Associated with Nonfat Dry Milk．＂ The serotypes contaminating Starlac Instant Nonfat Dry Milk were Salmonella binza and S．worthington．

THE MORBIDITY AND MORTALITY WEEKLY REPORT，WITH A CIRCULA－ TION OF 15，600，IS PUBLISHED．AT THE COMMUNICABLE DISEASE CENTER，ATLANTA，GEORGIA
CHIEF，COMMUNICA日LE DISEASE CENTER CHIEF，EPIDEMIOLOGY BRANCH ACTING CHIEF，STATISTICS SECTION

DAVID J．SENCER，M．D． IDA LANGMUIR，M．D．

IN ADDITION TO THE ESTABLISHED PROCEDURES FOR REPORTING MOREIDITY AND MORTALITY，THE COMMUNICABLE DISEASE CENTER WELCOMES ACCOUNTS OF INTERESTING OUTBREAKS OR CASE INVES－ WELCOMES ACCOUNTS OF INTERESTING OUTEREAKS OR CASE INVES AND WHICH ARE DIRECTLY RELATED TO THE CONTROL OF COM－ MUNICABLE DISEASES．SUCH COMMUNICATIONS SHOULD EE ADDRESSED TO：

THE EDITOR
MOREIDITY AND MORTALITY WEEKLY REPORT
COMMUNICABLE DISEASE CENTER
ATLANTA，GEORGIA 30333
NOTE：THE DATA IN THIS REPORT ARE PROVISIONAL AND ARE GASED ON WEEKLY TELEGRAMS TO THE CDC 日Y THE INDIVIDUAL GASED ON WEEKLY TELEGRAMS TH THE CDC GY WEATE HETH DEPARTMENTS．THE REPORTING WEEK CONCLUDES ON SATURDAY；COMPILED DATA ON A NATIONAL＇日ASIS ARE RELEASE．$D$ ON THE SUCCEEDING FRIDAY．


[^0]:    *All persons, regardless of age, entering the United States from non-exempt areas are required to be vaccinated or revaccinated within three years unless vaccination is medically contraindicated. The International Sanitary Regulations provide

[^1]:    *For purposes of validating certificates for international travel, primary vaccinations must be inspected. Although desirable, inspection of revaccinations is not mandatory.

[^2]:    ## REFERENCES

    ${ }^{1}$ Neff, John M., et al. Smallpox Vaccination Complications United States - 1963. I. National Survey. II. Results Obtained by Four Statewide Surveys. 'To be published - New England Journal of Medicine.
    ${ }^{2}$ WHO Technical Report Series No. 283, WHO Expert Committee on Smallpox, 1964.
    ${ }^{3}$ International Sunitary Regulations, Article 98 (Footnote 9), World Health Organization, Geneva, 1966.

