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Epidemic of Poliomyelitis in British Guiana.  
Interim Report of the Honourable Minister of  
Labour, Health and Housing.

Introduction:

Poliomyelitis is a disease caused by a virus of which there are three types, Type I, Type II and Type III. The manifestations of the disease are varied ranging from an inapparent illness to a severe paralytic illness. Most persons infected show no symptoms or a transient illness. However, paralysis occurs as an infrequent complication. The clinical types may be classified:

(a) Inapparent infection without symptoms. These cases are diagnosed by laboratory examinations, i.e. finding virus or an increase in antibody level in the blood.

(b) Abortive Poliomyelitis - in which there is fever, headache, sore throat, loss of appetite, constipation and pain in muscles. The illness may last 24 - 48 hours and is commoner in children. These cases cannot be diagnosed clinically but only by laboratory tests.

(c) Non-paralytic poliomyelitis - in which there are symptoms and signs of involvement of the central nervous system, in addition to the minor illness. The non-paralytic illness may clear up in 4 to 7 days or become severe with paralysis developing.

(d) Spinal paralytic poliomyelitis - Paralysis develops after 1 - 4 days of non-paralytic illness. The muscles are paralysed, but not usually symmetrically. The muscles usually paralysed are those of the legs, arms, back, thorax and diaphragm.

Paralysis of muscles of respiration may occur.

(e) Bulbar paralytic poliomyelitis. In this form, there is paralysis of the muscles of the soft palate, pharynx, of the face, tongue, jaw and eye. Paralysis of the respiratory and circulatory centres may occur. Acute deaths follow bulbar involvement.

(f) Encephalitic manifestations with coma may occur together with paralysis of muscles.

The virus enters through the mouth and infection occurs in the throat and in the rest of alimentary tract. The virus is spread by transfer of throat secretions and faeces through contamination of the hands. The average incubation period of the disease is two weeks, but may be as long as 30 days.

If a case of poliomyelitis occurs in a member of a family, it is usual for the virus to be found in other members although they appear well.

In tropical countries, where the standard of living is poor and also the sanitation, the virus is disseminated among the children and they acquire protection through mild infection earlier than those brought up under good conditions.

The Outbreak:

The first cases at the Georgetown Hospital were admitted on December 1. On the 4th, there were two more cases, on the 5th, 3 cases, on the 6th, 2 and on the 7th one case. Thereafter cases continued to arrive in the hospital.

Material collected from patients were prepared at the Central Medical Laboratory and sent to the Trinidad Regional Virus Laboratory for virological examination, and the results reported promptly as Type I Polio Virus.

Up to 9th January this year, there had been 269 cases of paralytic poliomyelitis, of which 266 have been studied carefully. It is possible that the epidemic reached its peak on about 26th December, but it is difficult to say at this time how the epidemic curve will continue.

There have been 16 deaths, but all have not yet been analysed to exclude "non-polio" deaths.

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The cases have occurred in various parts of the country and the following table gives the number and rate per 100,000 persons as on January 9, 1963.

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<u>Area</u>	<u>No.</u>	<u>Rate</u>
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West Demerara	66	116.2
Essequibo(excluding islands)	17	59.5
Leguan	13	198.0
Wakenaam	10	149.0
Berbice	9	6.3

The highest incidence has been in Leguan, and the lowest in the county of Berbice. No cases have been reported in the Rupununi and the North West District. There have been four cases in the Bartica Hospital, 22 in the Mackenzie Hospital and 13 in the New Amsterdam Hospital.

The age distribution of the disease of the cases analysed is set out below -

TABLE II.  
Age Distribution of Cases.

	<u>No.</u>	<u>Percentage</u>
Under 1 year	28	10.5
1 -	87	32.7
2 -	55	20.7
3 -	43	16.2
4 -	14	5.3
5 -	9	3.4
6 -	6	2.3
7 -	8	3.0
8 -	4	1.5
9 -	0	0
10 +	7	2.6

Data incomplete.

It will be observed that children under the age of 6 years comprised some 89% of the cases.

There is no significant difference, so it appears in the incidence among the races. Table III sets out the incidence.

TABLE III.  
Racial Incidence of the Disease.

<u>Race</u>	<u>No.</u>	<u>Rate /100,000</u>
East Indian	140	50
African	81	43
Mixed	28	42.5

Data incomplete.

Assistance from the U.S.A.

Early in December as soon as the first cases were diagnosed clinically, a request was sent to WHO/PAHO Washington for assistance. WHO/PAHO consulted the U.S.A. Government through A.I.D. and with the approval of the Ministry, the U.S.A. Government sent a team of four doctors experienced in Epidemic Poliomyelitis, under Dr. H.M. Gelfand, M.D. from Communicable Disease Center, Atlanta, Georgia, to assist us. The team arrived on December 21st in Military Transport Plane bringing with them 200,000 doses of Sabin's Vaccine, as well as equipment and supplies. At /the request.....

the request of the Ministry, a second team under Dr. G.M. Harrison, M.D. from the "Rehabilitation Unit" of Baylor University, Houston, Texas, arrived on December 27. The team included two physiotherapists, two nurses and a medical student all experienced in dealing with Poliomyelitis. A.I.D. has secured for our use, further equipment, and supplies including eight "iron lungs". It should be pointed out that in the U.S.A. such medical teams go to the assistance of communities stricken with Poliomyelitis since the facilities of local hospitals are severely taxed in epidemics.

#### Care of Patients in Hospital (Georgetown):

The Children's Medical Ward was converted into a Poliomyelitis Ward, and Ward 2 into a Ward for convalescent patients. The Nurses' Lecture Room in the Lady Thompson block as well as three rooms in that Ward were converted into wards for "non-polio" cases. With the assistance of the Technical Institute, cots were made and with the help of the local Branch of the Red Cross - linen, etc. was provided. There were also voluntary helpers.

Dr. Harrison assisted Dr. Walter Singh, the Physician in charge of Children's Ward, in setting up a Respiratory Unit for children with difficulty in breathing and it was arranged for all very ill patients to be brought into the Georgetown Hospital from other hospitals. One patient was brought from Bartica Hospital and one from Mackenzie Hospital.

The American Physiotherapists have been recording the condition of muscles of paralysed children, treating them, and teaching the local physiotherapists. In addition the American Nurses and Dr. Harrison have given instructions to both nurses and doctors in the care of patients and the use of the iron lungs.

Additional Nursing staff and other staff were allocated to the Children's wards..

Children who had recovered were sent home to return to the Polio Clinic. A special physiotherapy department was established by conversion of a house in the Hospital Compound.

Arrangements were made with the local Branch of the Red Cross to receive at first convalescent "non-polio" children and recently to accept convalescent polio children. Many children may have to be kept at the Red Cross Convalescent Home for a short or long period of time.

At the Central Medical Laboratory, a virology unit was set up.

#### Rehabilitation:

It is anticipated that some fifty (50) children may need special care and attention because of paralysis. In order to assist them, there will be need for additional physiotherapists, two to three, and a technician to make appliances. At a later stage, the advice of an Orthopaedic Surgeon will be required.

With the assistance of the local Red Cross it will be possible to make arrangements for convalescent children.

#### Control of the Outbreak:

Apart from taking routine public health measures, arrangements were made to vaccinate all children five years of age and under. The Ministry received a free gift of 2,000 doses of Sabin's Vaccine from Messrs. Burroughs Wellcome of London. From that supply, the nursing staff attached to the Children's wards was vaccinated. At the same time, those persons specially exposed were also given vaccine. The children in the island of Leguan were vaccinated on the 18th - 20th December.

On December 22, the mass immunisation programme was commenced in the Greater Georgetown Area. On that date, a supply of 50,000 doses of vaccine suitable for use in remote areas was received on an order placed by the Ministry.

It should be mentioned that regular conferences were held at the Ministry to discuss the outbreak and to make arrangements to deal with it.  
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The Medical Officers of the City of Georgetown, the Chief Medical Officer of the British Guiana Sugar Producers' Association and Dr. F.M. Williams, a former Senior Physician at the Georgetown Hospital, attended meetings.

In order to advise people and encourage them to make use of the vaccine, radio broadcasts were arranged by the G.I.S. The Honourable Minister of Labour, Health and Housing and various members of the staff and members of the American teams took part. The Medical Officer of Health, Georgetown as well as His Worship the Mayor greatly assisted in publicity and in other ways in making the programme a successful one in Georgetown.

Vaccine has been given to children in all parts of the country with the exception of certain very remote interior areas - Upper Mazaruni, Upper Essequibo. Vaccine is being sent into the rivers of the North West District, the Pomeroon, and certain Islands in the Essequibo. All the figures are not yet available, but it is known that 94,121 children have received the vaccine and they represent 79% of the children in the area covered. It is interesting to observe that in the Georgetown and Greater Georgetown Area, the response has been exceedingly good.

General Comments:

Since the outbreak of 1956-1957 when there were 100 cases of Poliomyelitis, very few cases have been reported. In that outbreak, 83% of the patients were children under the age of five years of age. Professor J.L. Melnick, then at Yale, studied the outbreak and found that Type I and Type II Polio virus were responsible. He examined blood specimens in the Georgetown and coastal areas and found that few children above the age of four lacked antibodies, and by the age of fifteen years almost all persons had antibodies. Specimens from the Amerindian children in the Rupununi also showed antibodies.

Quite recently Dr. Mauricio Martins da Silva of WHO/PAHO visited the Ministry and discussed the use of Sabin's vaccine to replace the Salk vaccine of the Polio-immunisation Programme. It was planned to use the oral vaccine early in 1963 and to continue the programme with the annual immunisation of infants.

On account of the outbreak, the Ministry used the vaccine earlier.

There is need for a second dose. The use of the trivalent vaccine containing the three types of the virus should produce good immunity.

In order to determine the efficacy, laboratory studies will be made of blood specimens collected before and after the use of the vaccine. In that way, it will be known how effective has been the programme. With the use of the vaccine it is hoped that Poliomyelitis will be eradicated from the country.

Thanks:

Sincere thanks go to WHO/PAHO and the United States of America Government for their assistance in our time of need and to the countries who offered help - including the United Kingdom, Cuba and the University of the West Indies.

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Ministry of Labour, Health and Housing,  
Brickdam, Georgetown.  
10th January, 1963.

A D D E N D U M.

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NOTE:

It should be explained that there will be cases of Poliomyelitis in children who have had the oral vaccine, because the virus of Poliomyelitis had entered their bodies before the vaccine was taken.

Therefore, after the vaccination programme, cases will continue to occur for several weeks.

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