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EXPANDED PROGRAMME ON IMMUNIZATION
(E P I)

A Review of Activities in 1986 and Programme for 1987

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EXPANDED PROGRAMME ON IMMUNIZATION (EPI) IN THE ENGLISH-SPEAKING CARIBBEAN AND SURINAME 1986

1.0 INTRODUCTION

1.1 The year 1986 was one of further progress in EPI coverage in the English-speaking Caribbean and Suriname. All 19 countries which make up this group achieved an immunization coverage of over 50% with DPT and TOPV among children under 1 year of age. There were 12 of the 19 who achieved over 80% coverage with DPT and 15 who achieved the same level (over 80%) with TOPV. Three countries attained the maximum coverage of 100% for both DPT and TOPV vaccines. Immunization coverage with all vaccines including BCG and measles can be seen on Table 5 for the year 1986.

1.2 Immunization of children under 1 year of age continues to be the primary target group. Children over one year who did not receive all their immunizations were second priority while expectant mothers were given tetanus-toxoid after their first trimester of pregnancy.

DT and TOPV boosters are given to children entering school for the first time usually 4 to 5 years of age. In some countries, these boosters are given at 18 months of age or 12 months after the third doses of DPT and TOPV are given. All 19 countries require children to be fully immunized before they are allowed admission into school and a few have passed legislation to this effect.

Evaluation and training activities have continued, but deficiencies occur mainly because of changes and transfers, which do not always provide for proper handing over and replacement. There is also a need for more support and commitment in programme-implementation at all levels, especially the central administrative level. Standardized procedures and guidelines need to be further improved in accordance with current practices and applied as the national accepted policy. There are about 15% of children in some countries who do nto return for their third doses of DPT and TOPV immunizations. Although there have been improvements in this area, more effort is required to reduce the number of defaulters (drop-outs) to about 5% or less.

An area of continued weakness is inadequate budgetary provision for transportation of personnel, vaccines and equipment. This also affects supervision and the maintenance of the cold chain at the national level.

The Revolving Fund, through which vaccines are purchased, has continued to assist in the reliability and quality of vaccines available to the programmes. In addition, the cost and system of payment are most economical and convenient, and therefore have contributed to a more effective and increased immunization coverage. However, there are infrequent occasions when vaccines do not arrive on schedule. These may continue to occur due to transhipment of vaccines, especially to those islands which are not situated within any international air route. The Revolving Fund will have to continue searching for the most reliable possibilities of shipping vaccines with precise advance information to their respective destinations.

2.0 THE SIX TARGET DISEASES FOR PREVENTION THROUGH IMMUNIZATION

2.1 Immunizations against diphtheria, pertussis, tetanus, poliomyelitis and measles are routinely done in all the 19 countries. Eleven are routinely providing BCG immunization to children in their first year of life and another 2 are providing it to children 5 years of age and above (see table 5).

2.2 **Diphtheria** was notified from 1 country in 1985 (Jamaica) and two countries (Jamaica and Grenada) in 1986. The number of cases in 1985 were 5 and 2 in the following year, 1986, which gave an incidence rate of 0.2 in 1985 and 0.09 in 1986. Grenada reported 1 case in 1986 with an incidence rate of 0.87.

2.3 **Pertussis** was notified from 5 countries in 1985 and 7 countries in 1986. The lowest incidence rate for 1985 was 0.1 per 100,000 in Guyana and the highest 23 cases per 100,000 in Belize. In 1986, the lowest rate was 0.4 in Barbados and the highest was 7.8 cases per 100,000 population in Grenada.

2.4 One case of **neonatal tetanus** was reported from Antigua in 1985. Tetanus (non-neonatal) was reported from 8 countries in 1985 and 6 countries in 1986. The lowest incidence rate in 1985 was 0.73 in Guyana and the highest 5.2 cases per 100,000 population in Cayman Islands. In 1986, the lowest rate was 0.1 in Jamaica and the highest 4.3 per 100,000 population in Grenada.

2.5 **Poliomyelitis** has not been notified since 1982. In that year, 1 case was notified from Suriname and classified as vaccine induced Type III. During that same year (1982) there were 60 cases of type I which occurred from March to June in Jamaica. Prior to the outbreak in Jamaica, immunization coverage was only 37% against poliomyelitis among children one year of age.

2.6 **Measles** was notified from 15 and 14 countries in 1985 and 1986 respectively. The lowest annual incidence rate in 1985 was 0.8 in Barbados and the highest was 300 cases per 100,000 population in Trinidad and Tobago. In 1986, the lowest rate was 0.8 again in Barbados and the highest was 220 cases per 100,000 population in Trinidad and Tobago.

2.7 **Tuberculosis** of all types was reported from 17 and 16 countries respectively in 1985 and 1986. The lowest annual incidence rate in 1985 was 1.8 cases per 100,000 population in Grenada, while the highest was 68.0 per 100,000 in Montserrat. In 1986, the lowest rate of 0.8 per 100,000 was reported in Grenada and the highest 44 cases per 100,000 population was reported in Dominica. Age distribution of cases was not reported (see Table 2 for cases and incidence rates of the six EPI diseases).

3.0 VACCINE COLD CHAIN

3.1 There are 18 of the 19 countries who are members of the Revolving Fund for the purchase of vaccines. All 18 continue to receive sufficient advance notice concerning the arrival of their vaccines from the Fund. However, on rare occasions, the vaccines do not arrive on the scheduled flight but turn up a day or two later. This sometimes results in the vaccines arriving on weekends which results in problems of collection and storage since the Central Vaccine Stores are usually closed on weekends.

The Revolving Fund will therefore have to continue searching for more reliable carriers and routes for transporting vaccines to their destinations efficiently.

3.2 Storage facilities, methodology and routine monitoring of vaccine storage temperatures continue to improve through supervision, training sessions, and practical corrective measures. Packing and distribution of vaccines from central to peripheral levels will continue to need more attention to ensure that vaccines arrive at their destinations in the best possible cold chain maintained condition.

3.3 Electric power failures and voltage fluctuations continue as major threats to the cold chain maintenance. All central vaccine stores should be provided with automatic emergency supply of electricity.

3.4 All central stores and health centres are aware of the importance of monitoring their vaccine storage temperatures on a daily basis. About 85% of all storage facilities are monitoring their storage temperatures continuously. The others tend to be erratic as there are periods when this activity is neglected.

4.0 MEMBERSHIP OF PAHO/WHO REVOLVING FUND FOR VACCINES

4.1 Eighteen countries continue to receive their vaccines through membership of the Revolving Fund for purchase of vaccines (see Table 3). In this way, the countries are assured of a reliable source of quality vaccines. In addition, the cost and system of payment is most economical and convenient.

5.0 IMMUNIZATION COVERAGE

5.1 Children under 1 year of age continue to be the priority group for immunization. Those over one year and up to five years are second priority. Expectant mothers are given 2 doses of tetanus toxoid during their first pregnancy. The first dose is given after the first trimester, followed by the second dose 4 to 8 weeks later. For subsequent pregnancies only a booster dose is usually given.

5.2 Although the less populated countries tend to achieve higher immunization coverage than the more populated ones, this trend is changing. The larger countries in this context refer to those with total populations of over 160,000. There are now a number of countries in this category with immunization coverage of over 80%, see Tables 4 and 5.

5.3 In 1986, there were more countries achieving higher levels of coverage than in the previous year (1985) as shown on the following table.

Levels of Immunization Coverage with 3 doses of DPT and TOPV in the 19 CAREC Member Countries, 1985 & 1986

Levels of Coverage Under 1 Year population		Number of Countries			
		DPT		TOPV	
		1985	1986	1985	1986
Under	50%	0	0	0	0
	50-79%	7	7	8	4
Above	80%	12	12	11	15
TOTAL		**19**	**19**	**19**	**19**

5.4 Immunization coverage in this report represents mainly the achievements of the various governments' health services as a part of their routine primary health care effort. Anguilla, British Virgin Islands, Cayman Islands and Montserrat have succeeded in obtaining immunization figures from private practitioners routinely. Barbados and some other countries are making progress in this area.

6.0 MONITORING OF IMMUNIZATION COVERAGE

6.1 This is a well-established routine which is practised in all the 19 countries. The tool for this purpose is a graphic form which was developed in the EPI effort here at CAREC in 1980, and is now used in many programmes in other parts of the world. It shows the estimated target population to be immunized during the course of the calendar year. This is further broken down into monthly targets by dividing by 12. At the end of each month the EPI manager records the total number of fully immunized infants on the form and plots the result in the space provided.

6.2 When progress is less than the target set by the programme, corrective action should be taken to improve coverage during the following month.

6.3 Monitoring of immunization coverage using the graphic form is now established at health centre level as well.

7.0 PROGRAMME FOR 1987

7.1 Improve the quality of, and increase immunization coverage among children under one year of age.

7.2 Encourage EPI Managers and health centres to estimate their target population of children under 1 year of age for immunization at the beginning of each calendar year, and monitor progress on a monthly, ongoing basis.

7.3 Each EPI Programme Manager in collaboration with the statistics office should use the recommended graphic form to monitor EPI coverage on a monthly or quarterly basis at the national level.

7.4 Immunization boosters at school entry and leaving ages (4 to 5 and 10 to 11 years respectively) will continue to be encouraged.

7.5 Encourage preventive maintenance of refrigerators and freezers such as regular defrosting, proper levelling, locating and setting to obtain maximum efficiency.

7.6 Continue assisting in improving the monitoring and recording of vaccine storage temperatures. Morning and afternoon temperatures in vaccine refrigerators, freezers and other storage facilities are to be monitored and recorded daily.

7.7 Promote more supervision to ensure proper storage, handling and utilization of vaccines at all levels of the EPI.

7.8 Assist in training and retraining all levels of staff of the EPI. Training will include supervision, cold chain maintenance, immunization practices and procedures, surveillance of the EPI diseases especially poliomyelitis as well as recording and reporting.

7.9 Continue emphasizing a standard and adequate reporting form in each country and prompt submission of reports at the end of each month through a well-defined and efficient procedure to one central authority (EPI Manager) in the Ministry of Health.

7.10 Health education to encourage parents to bring their children for immunization at the optimal age, how many visits are required before the child's course of immunizations are completed, what reactions may occur, why, and what to do.

7.11 promote community participation to assist in increasing coverage. This to be pursued in collaboration with health education units in the respective ministries of health. Remote areas and those of difficult access to be given priority.

7.12 The possibility of providing emergency electric power supply to central vaccine stores should be explored in those countries where this does not exist. Linking the vaccine store to the emergency electric power supply of the General Hospital may be a solution. A standby generator preferably which works automatically may also be a solution.

7.13 Surveillance of the EPI diseases to be increased, especially surveillance of poliomyelitis. Case detection with accurate diagnosis followed by investigation, analysis and prompt reporting through an efficient procedure to the appropriate authority in the Ministry of Health will be emphasized.

7.14 More effort will be made to promote and increase measles immunization coverage among children in the recommended target age groups.

7.15 Encourage the introduction of rubella vaccine in the form of measles-rubella (MR) vaccine especially in situations where both diseases are current public health problems. Where resources are available, the vaccine of choice should be MMR (Measles-Mumps-Rubella) vaccine.

7.16 Recommend and assist with the organization and implementation of immunization campaigns or immunization days in any situation where such a strategy may be helpful in achieving higher coverage within available resources.

TABLE 1

VACCINES BEING ADMINISTERED IN THE CAREC-SERVED CARIBBEAN AREA 1986

NO.	COUNTRY	DPT	TOPV	BCG	MEASLES	DT	TT
1	Anguilla	x	x	x	x	x	x
2	Antigua & Barbuda	x	x	-	*	x	x
3	Bahamas	x	x	-	x	x	x
4	Barbados	x	x	x	*	x	x
5	Belize	x	x	x	x	x	x
6	Bermuda	x	x	-	*	x	x
7	British Virgin Islands	x	x	x	*	x	x
8	Cayman Islands	x	x	x	*	x	x
9	Dominica	x	x	x	x	x	x
10	Grenada	x	x	-	x	x	x
11	Guyana	x	x	x	x	x	x
12	Jamaica	x	x	x	x	x	x
13	Montserrat	x	x	x	*	x	x
14	St. Christopher/Nevis	x	x	x	x	x	x
15	Saint Lucia	x	x	x	x	x	x
16	St. Vincent/Grenadines	x	x	x	x	x	x
17	Suriname	x	x	-	x	x	x
18	Trinidad & Tobago	x	x	-	x	x	x
19	Turks & Caicos	x	x	x	x	x	x
	Total	19	19	13	19	19	19

x = Vaccine is being administered

Θ = Measles vaccine is administered in MR form (measles Rubella)

* = Measles vaccine is administered in MMR form (Measles, Mumps and Rubella)

- = Vaccine is not being administered

TABLE 2

DIPHTHERIA, PERTUSSIS, TETANUS, POLIOMYELITIS, MEASLES & TUBERCULOSIS (ALL TYPES)

Cases reported by number and rate per 100,000, 1985 & 1986

NO.	COUNTRY (in order of population size)	DIPHTHERIA				PERTUSSIS				TETANUS				POLIOMYELITIS				MEASLES				TUBERCULOSIS			
		1985		1986		1985		1986		1985		1986		1985		1986		1985		1986		1985		1986	
		No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
1	Anguilla	-	-	-	-	-	-	-	-	-	-	--	-	-	-	-	-	-	-	-	-	1	14.	-	-
2	Turks & Caicos Is.	-	-	-	-	-	-	-	-	-	-	--	-	-	-	-	-	2	25	-	-	4	49.	2	24.
3	Virgin Is. (U.K.)	-	-	-	-	-	-	-	-	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-
4	Montserrat	-	-	-	-	-	-	-	-	-	-	--	-	-	-	-	-	-	-	-	-	9	68.	5	37.
5	Cayman Islands	-	-	-	-	-	-	-	-	1	5.2	-	-	-	-	-	-	4	21	2	10	4	21.	1	5.1
6	St. Chris/Nevis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27	53	22	43	-	-	-	-
7	Bermuda	-	-	-	-	-	-	4	6.9	-	-	-	-	-	-	-	-	-	-	4	6.9	3	5.2	6	10.
8	Dominica	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	64	82	45	57	8	10.	35	44.
9	Antigua	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1.2	-	-	2	2.5	7	8.6
10	St. vincent/Gren.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	4.8	2	1.9	14	13.	9	8.4
11	Grenada	-	-	1	0.87	-	-	9	7.8	2	1.8	5	4.3	-	-	-	-	8	7.1	20	17	2	1.8	1	0.87
12	Saint Lucia	-	-	-	-	-	-	-	-	2	1.5	-	-	-	-	-	-	9	6.6	32	23	21	15.	32	23.
13	Belize	-	-	-	-	36	23.	8	4.9	2	1.3	-	-	-	-	-	-	7	4.4	124	76	25	16.	23	14.
14	Bahamas	-	-	-	-	-	-	-	-	6	2.6	-	-	-	-	-	-	25	11	85	37	67	29.	45	19.
15	Barbados	-	-	-	-	13	5.1	1	0.39	1	0.40	3	1.2	-	-	-	-	2	0.79	2	0.79	12	4.7	7	2.8
16	Suriname	-	-	-	-	-	-	-	-	-	-	2	0.53	-	-	-	-	110	29	37	9.8	50	13	60	16.
17	Guyana	-	-	-	-	1	0.10	4	0.41	7	0.73	4	0.41	-	-	-	-	87	9.1	15	1.5	215	23.	190	20.
18	Trinidad & Tobago	-	-	-	-	9	0.76	15	1.2	12	1.0	12	0.99	-	-	-	-	3549	300	2660	220	112	9.4	119	9.8
19	Jamaica	5	0.22	2	0.085	5	0.22	16	0.68	-	-	2	0.08	-	-	-	-	67	2.9	30	1.3	130	5.6	88	3.7

- = No Cases **. . . = Insufficient Information**

Based on reports received at CAREC by 28th February, 1987

TABLE 3

EPI REVOLVING FUND PARTICIPANTS
IN THE CAREC-SERVED CARIBBEAN AREA 1986

NO	COUNTRY	STATUS	
		Participant	Non-Participant
1.	Anguilla	x	
2.	Antigua & Barbuda	x	
3.	Bahamas	x	
4.	Barbados	x	
5.	Belize	x	
6.	Bermuda		x
7.	British Virgin Islands	x	
8.	Cayman Islands	x	
9.	Dominica	x	
10.	Grenada	x	
11.	Guyana	x	
12.	Jamaica	x	
13.	Montserrat	x	
14.	St. Christopher/Nevis	x	
15.	Saint Lucia	x	
16.	St. Vincent/Grenadines	x	
17.	Suriname	x	
18.	Trinidad & Tobago	x	
19.	Turks & Caicos Is.	x	
	TOTAL	18	1

TABLE 4

IMMUNIZATION COVERAGE BY COUNTRY
1985 - 1986

Percentage of Children Under One Year Old Fully Immunized (3 doses or More) With DPT and TOPV

NO	COUNTRY (In order of population size from smallest to largest)	COVERAGE			
		1985		1986	
		DPT	TOPV	DPT	TOPV
1	Anguilla	100	100	88	85
2	Turks & Caicos	72	72	72	72
3	British Virgin Is.	81	81	100	100
4	Montserrat	99	99	100	100
5	Cayman Islands	91	91	95	95
6	St. Christopher/Nevis	92	89	100	100
7	Bermuda	52	52	72	86
8	Dominica	91	89	93	92
9	Antigua & Barbuda	100	100	96	96
10	St. Vincent/Grenadines	90	89	95	95
11	Grenada	61	77	98	92
12	Saint Lucia	87	44	78	88
13	Belize	59	60	95	81
14	Bahamas	86	84	85	81
15	Barbados	83	88	79	80
16	Suriname	84	84	80	80
17	Guyana	75	77	64	67
18	Trinidad & Tobago	75	74	70	71
19	Jamaica	60	58	74	74

Figures are rounded off to the nearest whole number and based on reports received at CAREC by 28th February, 1987.

TABLE 5

PERCENTAGE OF CHILDREN UNDER ONE YEAR OF AGE FULLY IMMUNIZED - 1986

NO.	COUNTRY (In order of population size mid-yr. 1985)	POPULATION		PERCENTAGE FULLY IMMUNIZED			
		Total in (000s)	Target Group < 1 yr.	DPT	TOPV	BCG	Measles
1	Anguilla	7.4	172	88	85	100	65
2.	Turks & Caicos Is.	8.3	190	72	72	96	49*
3.	British Virgin Is.	13.4	236	100	100	—	82*
4.	Montserrat	13.4	231	100	100	100	55*
5.	Cayman Islands	19.7	367	95	95	73	67*
6.	St. Christopher/Nevis	51.4	995	100	100	> 5	96
7.	Bermuda	58.4	904	72	86	—	77*
8.	Antigua & Barbuda	81.2	1161	96	96	—	80*
9.	Dominica	79.0	1852	93	92	87	97
10.	Grenada	115.0	2536	98	92	—	62
11.	St. Vincent/Grenadines	107.0	2851	95	95	76	88
12.	Saint Lucia	138.0	4212	78	88	73	91*
13.	Belize	163.0	4986	95	81	80	81
14.	Bahamas	232.0	5600	85	81	—	83*
15.	Barbados	254.0	4273	79	80	> 5	84*
16.	Suriname	379.0	11000	80	80	—	78
17.	Guyana	971.0	19000	64	67	76	42
18.	Trinidad & Tobago	1210.0	28000	70	71	—	42@
19.	Jamaica	3360.0	56210	74	74	73	36

> 5 = Only children 5 years of age and above are immunized

@ = MR Vaccine is used

* = MMR vaccine is used

— = Vaccine is not given in the National Programme.

Fully immunized means a course of 3 or more doses of DPT and TOPV have been administered at intervals of at least 4 weeks apart.
For other vaccines, it refers to one dose only.

FIGURE - 1

IMMUNIZATION COVERAGE BY COUNTRY 1985 AND 1986

PERCENTAGE OF CHILDREN UNDER ONE YEAR WHO RECEIVED 3 DOSES OF DPT

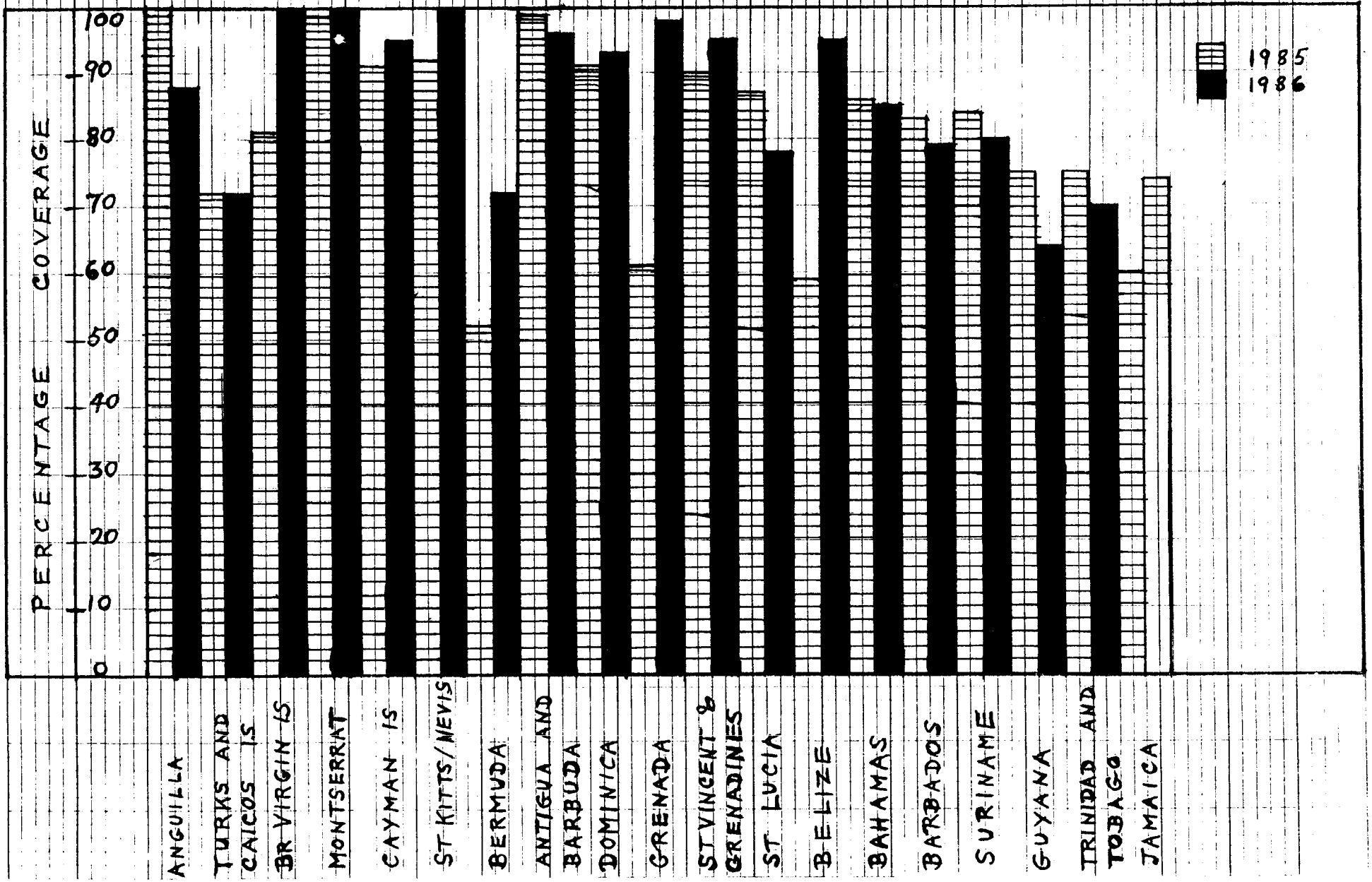

FIGURE-2

IMMUNIZATION COVERAGE BY COUNTRY 1985 AND 1986

PERCENTAGE OF CHILDREN UNDER ONE YEAR WHO RECEIVED 3 DOSES OF TOPV