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**EXPANDED PROGRAMME ON IMMUNIZATION
(E P I)**

A Review of Activities in 1985 and Programme for 1986

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**EXPANDED PROGRAMME ON IMMUNIZATION (EPI)
IN THE CAREC-SERVED CARIBBEAN AREA - 1985**

1.0 INTRODUCTION

- 1.1 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 CAREC-member 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 not 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%.

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 transshipment 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 19 CAREC member-countries. Of the 19 countries, 11 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 1984 and there were no notified cases in 1985. This is the first time that no diphtheria was reported in none of the 19 countries for a whole year. The last 7 cases in 1984 were reported from Jamaica which amounted to an incidence rate of 0.3 per 100,000 for that year.

- 2.3 **Pertussis** was notified from 6 countries in 1984 and 4 countries in 1985. The lowest incidence rate for 1984 was 0.4 per 100,000 in the Bahamas and the highest 20 cases per 100,000 in Cayman Islands. In 1985, the lowest rate was 0.2 in Guyana and the highest was 22 cases per 100,000 population in Belize.
- 2.4 **Neonatal Tetanus** was not reported in 1984 nor 1985. The last case was notified from Dominica in 1983. Tetanus (non-neonatal) was reported from 9 countries in 1984 and 1985. The lowest incidence rate in 1984 was 0.2 in Jamaica and the highest 2.3 cases per 100,000 population in Saint Lucia. In 1985, the lowest rate was 0.1 in Jamaica and the highest 2.5 per 100,000 population in the Bahamas.
- 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 58 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 16 and 15 countries in 1984 and 1985 respectively. The lowest annual incidence rate in 1984 was 1.3 in Antigua/Barbuda and the highest was 300 cases per 100,000 population in Trinidad and Tobago. In 1985, the lowest rate was 0.8 in Barbados and the highest was 290 cases per 100,000 population in Trinidad and Tobago.
- 2.7 **Tuberculosis** of all types was reported from 16 and 17 countries respectively in 1984 and 1985. The lowest annual incidence rate in 1984 was 3.8 cases per 100,000 population in Antigua/Barbuda while the highest was 49.0 per 100,000 in Montserrat. In 1985 the lowest rate of 1.9 per 100,000 was reported in Grenada and the highest 63 cases per 100,000 population was reported in Montserrat. 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 All 18 participating countries continue to receive sufficient advance notice concerning the arrival of their vaccines from the Revolving 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. During 1985, a consignment of polio vaccine was destroyed due to a power failure which occurred at a central vaccine store for an entire weekend. It took a few months before a new supply of polio vaccine arrived in the country. As a result, polio vaccine coverage in that country was 40% lower than the previous year. An emergency automatic supply of electricity has since been installed at the particular vaccine store. 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 of the 19 countries served by CAREC continue to be members of the fund for the 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 75%, see Tables 4 and 5.

5.3 In 1985, there were more countries achieving higher levels of coverage than in the previous year (1984) as shown on the following table.

**Levels of Immunization Coverage with 3 doses of DPT and TOPV
in the 19 CAREC Member Countries 1984 & 1985**

Levels of Coverage Under 1 Year population	Number of Countries			
	DPT		TOPV	
	1984	1985	1984	1985
Under 25%	0	0	0	0
25 - 49%	1	0	1	0
50 - 74%	6	5	6	6
Above 75%	12	14	12	13
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. Only Anguilla, British Virgin Islands and Cayman Islands 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 1986

- 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.

TABLE 1

**VACCINES BEING ADMINISTERED IN THE
CAREC-SERVED CARIBBEAN AREA
1985**

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

⊖ = 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, 1984 & 1985

NO	COUNTRY (in order of population size)	DIPHtheria		PERTUSSIS		TETANUS		POLIOMYELITIS		MEASLES		TUBERCULOSIS					
		1984		1985		1984		1985		1984		1985		1984		1985	
		No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
1	Anguilla	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15.0
2	Turks & Caicos Islands	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50.0
3	Virgin Islands (UK)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	Montserrat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	Cayman Islands	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	63.0
6	St. Chris./Nevis	-	-	4	20.0	-	-	-	-	-	-	-	-	-	-	-	20.3
7	Bermuda	-	-	-	-	1	2.1	-	-	-	-	-	-	-	-	-	-
8	Antigua & Barbuda	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	Dominica	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.4
10	Grenada	-	-	1	1.2	-	-	-	-	-	-	-	-	-	-	-	2.5
11	St. Vincent/Gren.	-	-	-	-	1	1.0	2	1.9	-	-	-	-	-	-	-	9.5
12	Saint Lucia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.9
13	Belize	-	-	3	2.0	-	-	3	2.3	2	1.5	-	-	-	-	-	12.0
14	Bahamas	-	-	1	0.4	-	-	2	1.2	2	1.2	-	-	-	-	-	16.0
15	Barbados	-	-	-	-	-	-	1	2.0	6	2.5	-	-	-	-	-	16.0
16	Suriname	-	-	-	-	-	-	5a	2.0	1	0.4	-	-	-	-	-	28.0
17	Guyana	-	-	-	-	-	-	8a	2.2	-	-	-	-	-	4.6
18	Trinidad & Tobago	-	-	22	1.8	9	0.7	15	1.3	12	1.0	-	-	-	-	-	14.0
19	Jamaica	7	0.3	27	1.1	1	0.04	4	0.2	2	0.1	-	-	-	-	-	29.0

- = No Cases ... = Insufficient Information a = estimate

Based on reports received at CAREC by 31st March, 1986

TABLE 3

**EPI REVOLVING FUND PARTICIPANTS
IN THE CAREC-SERVED CARIBBEAN AREA 1985**

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.	Jamaica	x	
TOTAL		18	1

TABLE 4

**IMMUNIZATION COVERAGE BY COUNTRY
1984 - 1985**

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			
		1984		1985	
		DPT	TOPV	DPT	TOPV
1	Anguilla	85	92	100	100
2	Turks and Caicos	60	62	72	72
3	British Virgin Islands	85	85	81	81
4	Montserrat	84	82	99	99
5	Cayman Islands	90	90	91	91
6	St. Christopher/Nevis	97	97	92	89
7	Bermuda	40	41	52	52
8	Antigua and Barbuda	94	92	100	100
9	Dominica	84	82	91	89
10	Grenada	76	75	61	77
11	St. Vincent & Grenadines	86	90	90	89
12	Saint Lucia	83	84	87	44
13	Belize	54	54	59	60
14	Bahamas	69	69	86	84
15	Barbados	83	77	83	88
16	Suriname	80	79	84	84
17	Guyana	70	67	75	77
18	Trinidad & Tobago	65	66	75	74
19	Jamaica	58	57	60	58

Figures are rounded off to the nearest whole number and based on reports received at CAREC by 31st March, 1986.

TABLE 5

IMMUNIZATION COVERAGE BY COUNTRY

Percentage of Children Under One Year of Age
Fully Immunized - 1985

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	6.7	160	100	100	98	81
2	Turks & Caicos Is.	8.0	180	72	72	100	57
3	British Virgin Is.	14.0	212	81	81	40	*40
4	Montserrat	14.2	319	99	99	97	41
5	Cayman Islands	20.0	400	91	91	55	*94
6	St. Christopher/Nevis	49.0	1078	92	89	>5	91
7	Bermuda	56.0	838	52	52	—	*52
8	Antigua and Barbuda	79.0	1106	100	100	—	*69
9	Dominca	89.0	1852	91	89	90	93
10	Grenada	103.0	2784	61	77	—	49
11	St. Vincent/Grenadines	116.0	3200	90	89	84	74
12	Saint Lucia	131.0	3970	87	44	100	68
13	Belize	161.0	6030	59	60	81	49
14	Bahamas	236.0	5610	86	84	—	79
15	Barbados	259.0	4081	83	88	>5	*88
16	Suriname	363.0	11,000	84	84	—	73
17	Guyana	868.0	15,500	75	77	98	40
18	Trinidad & Tobago	1220.0	26,000	75	74	—	032
19	Jamaica	2300.0	57,533	60	58	51	64

> 5 - Only children 5 years of age and above are immunized.

0 MR Vaccine is used.

* MMR vaccine is used.

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 - I

IMMUNIZATION COVERAGE BY COUNTRY 1984 AND 1985

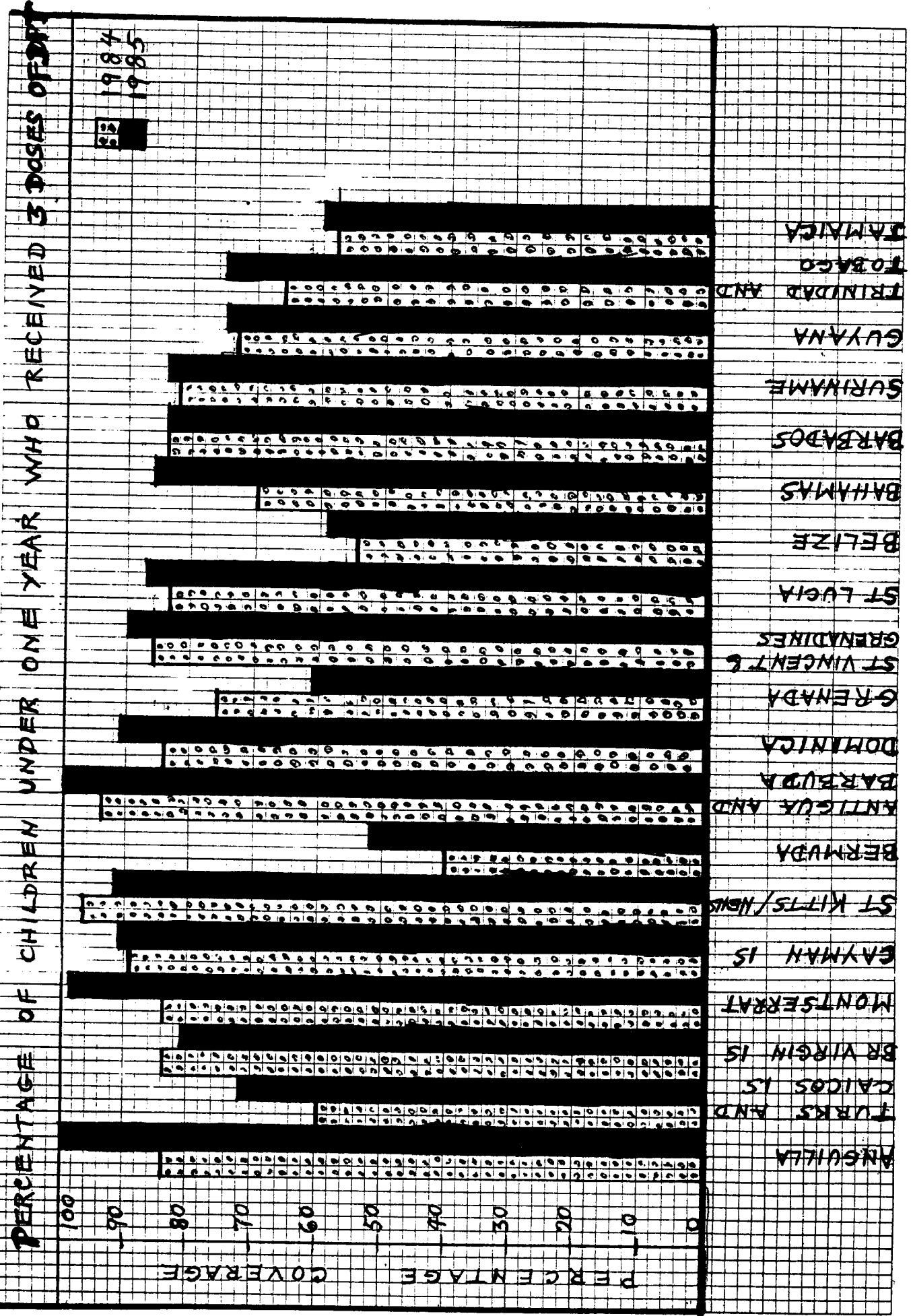


FIGURE - 2

IMMUNIZATION COVERAGE BY COUNTRY 1984 AND 1985

