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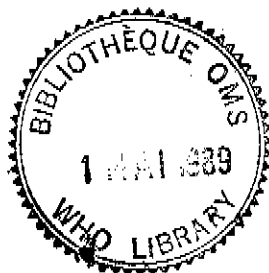
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EXPANDED PROGRAMME ON IMMUNIZATION
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GENERAL OVERVIEW OF THE
EXPANDED PROGRAMME ON IMMUNIZATION
IN THE WESTERN PACIFIC REGION

by

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1. INTRODUCTION

The Western Pacific Region is the most heterogenous of the WHO Regions, representing a unique spectrum comprising the largest and the smallest countries and areas; highly industrialized countries as well as those among the least developed, broad climatic variation, different political ideologies and cultures; and a widely varying level of health infrastructures development. Also metropolitan powers represented in this Region, through their jurisdictions are France, Portugal, United States of America and United Kingdom.

From the point of view of the development of economies and health infrastructures as criteria, the Region could be divided broadly into two groups: (1) developed and (2) developing countries/areas.

The developed countries with well-developed health infrastructures and delivery services with high immunization coverage supported by adequate budgetary allocations and manpower are Australia, Brunei Darussalam, Hong Kong, Japan, Macau, Nauru, New Zealand, Republic of Korea and Singapore.

The developing countries again can be divided as far as health services development is concerned in general and immunization coverage in particular, into two groups: (A) the island countries of the Pacific Basin and (B) the large Asian countries.

Group (A) - The countries/areas of the Pacific Basin - American Samoa, Cook Islands, Fiji, French Polynesia, Guam, Kiribati, New Caledonia, Nauru, Niue, Samoa, Solomon Islands, Tokelau, Kingdom of Tonga, Republic of Marshall Islands, Federated States of Micronesia, Commonwealth of Northern Mariana Islands, Republic of Palau, Papua New Guinea, Tuvalu, Vanuatu and Wallis and Futuna Islands. These countries/areas are small, with small population, scattered and comparatively isolated. The population groups are Malanesians, Micronesians and Polynesians. Economically underdeveloped with inadequate health infrastructure and budgetary allocation and very limited health manpower. These are the countries inspite of these limitations, have achieved with the support of external agencies, reasonably high coverage, as far as health services are concerned because of high community participation.

Group (B) - Large Asian countries - China, Kampuchea, Lao People's Democratic Republic, Malaysia, Philippines and Viet Nam. These are the developing countries with large population mass, have limited health infrastructure, inadequate budgetary allocation and manpower. Varying degrees of political problems and insurgency playing part in poor delivery of services. All these countries have in the past two to three years initiated acceleration activities for EPI with full political endorsement at highest level. To support these acceleration, large input has been required and has been forthcoming from external agencies. Malaysia is an exception and has not sought any external financial support. Varying degree of success is being achieved.

2. PROGRAMME DEVELOPMENT

2.1 Past developments

The WHO project was formed in 1976 to develop and support the national EPI. The project's activities concerned with promotion of national EPIs and most of the resources available to the regional programme were allocated towards this end.

The important activities of the project has been to participate in reviewing of ongoing programmes, preparation of plan of operations, training, evaluation, and development of cold chain and logistics for the countries of the Region.

The project also continued to have close collaboration with other UN agencies, particularly UNICEF as well as with non-governmental organizations interested to support immunization services in the countries within the Region.

The staff resources available for the project support is from intercountry team based in Manila, intercountry team based in Suva, country-based staff and consultants.

2.2. Recent Developments

2.2.1 EPI Acceleration

Greater progress has been achieved in all the countries of the Region. The countries which have strengthened the acceleration activities are China, Kampuchea, Lao People's Democratic Republic, Papua New Guinea, Philippines and Viet Nam.

2.2.1.1 China

In order to protect children from infectious diseases, the Chinese Government has formulated the policy of "prevention first". Since 1980, EPI activities have been strengthened by the establishment of complete EPI network at all levels in China. According to the schedule of immunization, children are immunized with EPI vaccines and therefore, the incidence of those infectious diseases have dropped considerably in the past few years.

It is one of the targets to achieve 85% coverage rates during the Seventh Five-year Plan on National Economic and Social Development. There are two steps to reach this goal: first, the coverage rates should reach 85% in all provinces before the end of 1988; second, the coverage rates should reach 85% in all counties by 1990. According to the 20 provinces' sample survey in the first half of 1988, 12 provinces have reached the target. China will join the programme of eradication of poliomyelitis as proposed by WHO Western Pacific Region. A national conference was held in Yichang City in June for the summarizing of experiences in EPI programme and submitting a brief plan on eradication of poliomyelitis in China.

Hepatitis B will be added to EPI. There is a cooperative experimental pilot project between WHO and China in Guangxi Zhuang Autonomous Region on bringing Hepatitis B vaccine into immunization programme. The experience will be spread in the areas where hepatitis B is rampant.

Morbidity of four reported infectious diseases are shown in the chart below:

Year	Polio		Measles		Whooping Cough		Diphtheria	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
1985	1 537	0.15	418 159	40.37	147 298	14.22	1 423	0.14
1986	1 844	0.18	198 738	18.97	83 979	8.02	787	0.08
1987	969	0.09	104 925	9.90	59 543	5.62	427	0.04

Although EPI work has been developed quickly and great economic and social achievement has been obtained, many problems are still being faced. Twenty per cent of the population are not covered by cold chain. For example, in the north-west and south-west minority areas of China, the population density is very low, the transportation is not convenient, economic, culture and education are very backward, medical workers lack modern technology and are of low quality. The lack of vehicles for vaccine transportation nationwide is another problem.

An accelerated EPI programme has been organized last winter and spring in order to achieve the first goal. Mobile immunization teams were organized in the remote and minority areas. The remote and minority areas will be the focus of the EPI work in the near future because those areas are the key for achieving the goal of 85% immunization coverage in China by 1990.

2.2.1.2 Lao Peoples' Democratic Republic

The EPI programme in Lao People's Democratic Republic was formally launched in 1982. The programme was rather to strengthen and increase accessibility of EPI from 2 provinces and 10 districts with the immunization coverage of about 2.0% in 1982 to all the 17 provinces and to selected 70 districts in 1988 aiming to benefit approximately 2 010 178 people covering 51% of the country's population.

Special efforts on EPI were made in 1986 and increased in 1987 but the immunization coverage still continued to remain very low in the country as a whole: 10% for DPT3 and OPV3, 15% for BCG and Measles vaccine, and 6% for TT2 for pregnant women. The low result is caused by the limited accessibility of the immunization services due to logistic problems, lack of communication, insufficient road system, etc.

However, the immunization coverage for infants below one year old in the areas with access to EPI services was quite satisfactory in 1987 such as: 40% for DPT3 and OPV3, 60% for BCG and measles vaccine, 23% for TT2 for pregnant women.

There is a strong commitment from the Government of the Lao People's Democratic Republic in achieving the UCI goal by 1990. This is reflected by the establishment of the National Commission for UCI. The EPI commissions were also established at provincial and district level in all 17 provinces in the country.

The WHO recommended immunization schedule is now applied, the minimum age for DPT and OPV is six weeks instead of three months.

Social mobilization and health education

The programme has a high political support. The president of the national commission for UCI is a member of political bureau, Vice President of the Council of Ministers and President of State Planning Commission.

The Lao Women's Union involvement for each vaccination session in the villages, has become a determining factor for the success of the intensive acceleration programme.

A total of 504 health education meetings in the Municipality of Vientiane with 46 250 participants were carried out. The other mass organizations: Youth Syndicates were also crucial to the success of the programme. Series of posters were distributed to all districts.

Coverage achieved

In February 1988, an actual immunization coverage survey with WHO assistance for five districts out of 8 districts, which had completed their sessions of immunization in Vientiane Municipality was conducted.

The coverage achieved:

BCG = 70%
Measles vaccine = 67%
DPT3 and OPV3 = 34%
TT2 = 47%

Three months after that, when all 8 districts had completed their immunization sessions on May 1988, the coverage achieved was as follows:

BCG = 77%
Measles vaccine = 70%
DPT3 and OPV3 = 71%
TT2 = 62%

Problems and obstacles

The intensive acceleration programme is the first of its kind in Lao People's Democratic Republic. EPI at national and provincial level have not much experiences in this fieldwork.

Public transportation in general is not reliable or is irregular. For the acceleration of EPI, the cold chain requires improvement.

2.2.1.3 Papua New Guinea

The stated goal of the EPI as expressed in the National Health Plan 1986-1990 is to reduce morbidity and mortality due to immunization preventable diseases. To do this, an objective has been established to increase vaccination coverage of the target groups by 5% each year for each vaccine, starting from the 1985 performance.

The main target group for immunization is all children less than one year of age. However, children between one and two are frequently vaccinated. Tetanus immunization is also carried out for women, during their first and fourth pregnancies.

(1) Sabin Vaccine (OPV):

In 1987, 91% of the target group received their first dose. However, the figure dropped to 84% for the second dose, and to 76% for third dose.

In 1987, only 44% received their third dose of OPV vaccine before their first birthday. Another 32% got it thereafter.

(2) Triple Antigen (DPT):

Vaccination coverage is more or less similar to that of OPV as regards the various doses as well as the distribution before and after one year of age.

(3) Measles vaccine

Although measles vaccine was introduced in the EPI in 1981, no data are available for 1981 and 1982.

In 1987, 65% were vaccinated against measles, between 9 and 24 months of age, 37% before and 27% after the first birthday.

(4) B.C.G. vaccine

In 1987, BCG covered 74% of the children less than one year old. As a matter of fact, data regarding BCG above one year include booster doses administered to children at school-entry, and school-leaving. Data for doses administered during the second year of life is not available separately.

(5) Pigbel vaccine

According to the National EPI Policy Document, Target population for Pigbel immunization is "... In the Highlands, children from age two months up to five years old. Children at school entry age should also receive Pigbel vaccine if they have no previous history of Pigbel vaccination.

Problem of "dropouts"

Sabin vaccine was taken as an indicator for dropouts in the series of vaccinations. Dropouts between dose-1 and dose-3 in Sabin vaccination shows that although the problem of dropouts is high in 1987, there is a general trend of improvement over the last nine years. The need for better performance in the different provinces is apparent. Proper supervision, monitoring, and follow up from the different administrative levels is helpful.

2.2.1.4 Philippines

In April 1986, an EPI comprehensive programme review was conducted. Cluster survey for coverage was a component of the review; it showed that only 21.3% of the children surveyed were fully immunized. The survey included reasons for immunization failures.

Table I: EPI Coverage by Antigen
Cluster Survey Philippines
April 1986

Antigen	% Coverage
BCG	62.2
DTP3	45.8
OPV3	47.6
Measles	43.2
Fully Immunized	21.3
Tetanus Toxoid	18.5

Strategies for Acceleration:

Strengthening of the immunization activities was the earliest approach implemented. This includes revision of the immunization schedule of 3-14 months old children to an earlier schedule from birth - 11 months. In order to give opportunities to infants to be fully immunized, a monthly or even more frequent immunization sessions were adopted instead of quarterly immunization rounds.

An EPI manual was developed in order to standardize and streamline operations.

EPI newsletter was developed and distributed. This is one way of updating knowledge, sharing of experiences and dissemination of new guidelines at all levels.

Improvement of the monitoring system has been started in 1987. Feedback of programme reviews has been done periodically during the national, regional, provincial and municipal staff meetings. The problem among the cities is largely due to administrative reasons as they are under the direct surveillance of city local government.

Such improvement in the monitoring system has been achieved due to computerization of reports, standardization of format and timetable for reporting.

Better communication with the beneficiaries - parents of infants - through mass media is now undergoing through experimentation under a health communication scheme supervised by the Public Information Health Education service of the Department of Health. Preliminary results have been very encouraging.

Periodic/continuous training of EPI managers and peripheral workers is an important strategy in our EPI acceleration. Workshops for these managers are conducted twice a year to discuss problems/solutions, strengths/weaknesses, formulate operational plans and recommend policies.

In the reorganization, the National EPI Staff unit of 2 staff was increased to twelve staff members. Unfortunately, up to this time, we have not recruited the key officials for this program.

Social mobilization campaigns were done in selected urban areas. These were joint efforts of Rotary Clubs, UNICEF, local government and other non-governmental organizations.

1987 Achievements:

The 1987 achievement of the Philippine Immunization Program showed (Table II) that we have increased our fully immunized children from 21.3% to 62%.

Table II EPI Coverage by Antigen
Philippines, 1987

Antigen	Coverage of Infants %
BCG	92%
DTP3	73%
OPV3	73%
Measles	68%
Fully Immunized	62%

Evaluation of Achievements:

The Philippines is far from eliminating its problems. Improvement of the cold chain system has been steadily built up but there is no readily responsive scheme to detect breakdowns and instigate immediate measures for repairs/maintenance.

EPI newsletters cannot be produced on time because of the lack of manpower and problems with printing press.

Disease surveillance is still a problem as field reports are most often delayed and incomplete. Reports of epidemics are more timely because of the awareness of local government/media and other agencies. Sentinel surveillance sites are now undergoing careful development.

The strategies used have been built and adapted with the existing systems of the Philippines. The process can almost be equated to just making the plans and system more functional and more efficient to programme needs. These strategies are very easy to sustain.

2.2.1.5 Viet Nam

The Progress of EPI acceleration strategies in 1987-1988

(a) Political leaderships are involved as chief EPI steering Committee at all levels. They are in charge of EPI activities in their localities.

(b) 42 930 points of vaccination were set for 7 358 communes in the whole country; on an average one point of vaccination per one commune.

- The immunization schedule

* Basic immunization for children under one year

Under 1 month	:	BCG, Polio
2 months	:	DPT, Polio
3 months	:	DPT, Polio
4 months	:	DPT, Polio
9 months	:	Measles

* Booster dose for:

Children 12-23 months	DPT and Polio
Children 24-35 months	Polio

- obstetrics guides are also involved to vaccinate BCG and polio for children at birth

(c) Vaccinators follow up strictly children who are not given vaccines at vaccination sessions.

- Prior to vaccination sessions, mothers are informed in details dates and places of vaccination;

- The purpose of immunization, dates of return and the necessity to return are informed to mothers when they are present at vaccination sessions with their children. The invitation cards are included in the above mentioned information.

- Recently, incorporation of the growth chart is applied as pilots in certain localities.

- (d) Channeling and identifying of children in need of immunization were achieved by health workers, leaders of working group, members of Women's Union and Red Cross Society.
- (e) Vaccination Day (from 25th to 30th monthly) is organized in the whole country. The permanent vaccination (weekly) is run in some urban areas.
- (f) The World Health Day, 7 April 1987 "Immunization - A chance for every child" used for promotion of the programme among political leadership. The Day (7th April 1987) was taken to launch EPI acceleration in the entire country.

Training

- 19 557 peripheral health workers/leaders were trained for acceleration

Mobilization of political will and social mobilization for UCI/EPI

Since 1985, the Chairman of the Minister's Council, Chairman or Vice-Chairman of Provincial (districts) People's Committee, participate as leaders of EPI Steering Committee from national to communal and districts level. Finance, electricity supply, manpower, communication propaganda, social mobilization etc. are given priority for EPI activities - and has resulted in good achievements of the goal UCI/EPI 1986-1987.

Health information system in EPI

- EPI information from provinces were reported quarterly but sometimes delayed and incomplete. From now, EPI information will be conducted monthly.

Improvement of immunization services to disadvantaged, in urban areas:

- (a) seven surveys were performed in such areas in 1987.
- (b) poor response from population and routine reporting system not satisfactory, were noted.
- (c) Regular vaccinations are implemented in the entire urban areas. The Steering Committees are established from provincial level to communal level in both urban and rural areas.

The urban surveillance system for EPI target diseases has started in Hanoi in 1988. It should be carried out in Ho Chi Minh City and in the other large cities such as Da Nang, Hai Phong.

2.2.2 Coverage

Wide variation in the immunization programme development and its implementation is noticeable because of varying degree of coverage by health services.

Overall regional coverage has reached BCG - 68%, DPT3 - 61%, TOPV3 - 75.1%, measles - 60%.

Dropout rate still plagues many of the counties which are achieving over 80% coverage for 1st dose of DPT and TOPV.

2.2.3 Incidence

Incidence of EPI target diseases, i.e. poliomyelitis, diphtheria, whooping cough and tetanus, has shown definite downward trend. Downward trend in incidence of measles is seen only in countries where immunization coverage is high. Downward trend in incidence of tuberculous meningitis and disseminated tuberculosis in children under five years is certainly noticeable in several of the countries, which have achieved high BCG coverage. However, overall incidence of all forms of tuberculosis is not showing clear decreasing trends.

2.2.4 Training

Training has continued to form one of the main components of the programme.

Specific training courses were conducted for programme planners, supervisors and peripheral health workers. Such courses were conducted in China, Fiji, Lao People's Democratic Republic, Papua New Guinea, Philippines, Samoa, Solomon Islands, Tonga, Viet Nam and Malaysia.

Training in repair and maintenance of cold chain equipment and in logistics are becoming increasingly important, as equipment are getting older. Such training courses were conducted in China, Philippines, Viet Nam, Papua New Guinea and an intercountry course in Fiji for the South Pacific Island countries.

To improve the training of medical students, nurses and allied health professionals, WHO initiated the incorporation of the current principles of expanded programme on immunization into the existing curricula of the medical and nursing schools in the Philippines and Papua New Guinea.

2.2.5 Cold chain and logistics

Three of the largest countries in the region - China, Philippines and Viet Nam have finalized the selection of the equipment for the cold chain. Most of the countries have received majority of the vaccine storage equipment as planned and have distributed them to the central, intermediate and peripheral levels of the health services.

WHO contributed to the strengthening of repair facilities and their organization in China, Papua New Guinea, Philippines, Viet Nam and the countries in the South Pacific by providing staff and training materials to facilitate the conduct of national workshops.

Field trials on the use of solar powered refrigerators for the vaccine storage were completed in the Philippines, Solomon Islands and Vanuatu. The results of the trials were discouraging. WHO will continue to pursue the trials as the new and improved solar powered refrigeration systems become available.

2.2.6 Vaccine production/procurement

The EPI vaccine production in the developing countries is limited.

China which produces all the EPI vaccines has been technically supported by WHO to upgrade production facilities. World Bank funding for the building of new plants in China is still under negotiation. In the meantime, UNICEF has provided substantial financial and equipment support to upgrade the quality of vaccines in six institutes to practice good manufacturing practices.

Viet Nam is producing its own oral poliomyelitis vaccine, although it is not yet up to the WHO standards. Technical support is being provided to upgrade production facilities. A test run on the new DPT production facilities was conducted and efforts to improve and increase BCG production is being supported. A feasibility study for the production of measles vaccine has been initiated.

The Philippines is self-sufficient in the production of BCG and tetanus toxoid, both of which meet the national quality control standards which are similar to WHO standards. Evaluation to improve the DPT production was conducted and recommendations were submitted to the Government. It will take sometime before this vaccine will be produced in the Philippines, in spite of almost 10 years of input by WHO/UNICEF and Philippine Government.

UNICEF has played an important part in the promotion of EPI programme and has been a major provider of the vaccines and cold chain equipment to most of the smaller and large countries of the Region.

2.2.7 Hepatitis B vaccine production/procurement

The technology, expertise and equipment for the large scale production of hepatitis B vaccine have been successfully transferred to China through WHO collaboration with Japan. China produced over nine million doses of the vaccine in 1986 and 17 million in 1987 and initiated immunization of infants in the highly endemic rural areas and big cities.

WHO also collaborated with Fiji, Tonga and Western Samoa in the establishment of laboratory facilities and training of personnel for identification of high-titre carriers of hepatitis B surface antigens and collection, processing and concentration of plasma. The concentrated plasma will be processed into vaccine in Japan and vaccine will be returned to the countries for the immunization of infants in 1988-1989.

2.2.8 Surveillance - control and elimination

The weakest component in the EPI programme is the surveillance of the EPI target diseases. As countries are approaching a high level of immunization coverage, case investigation of EPI target diseases need to be given high priority. This activity has been initiated in 1986 in several of the South Pacific Island countries. However, a major effort will be needed to maintain high immunization coverage, prompt investigation of possible cases, and taking appropriate containment measures.

2.2.9 Programme reviews

WHO also participated in comprehensive programme reviews of national programmes in China, Lao People's Democratic Republic, Papua New Guinea, Philippines, Western Samoa, Solomon Islands, Tonga and Viet Nam.

Similarly, specific reviews were undertaken of the existing cold chain and logistics for EPI at various levels.

2.3. Analysis of EPI target disease incidence and immunization coverage trends in the Western Pacific Region

2.3.1 Tuberculosis

The general trend of all forms of tuberculosis has shown modest decrease; from 32 per 100 000 population in 1980 to 23 in 1985.

The disease is widespread, with variable incidence rate and is being reported from every country.

The decreasing trends have been seen in Japan, Australia, Brunei Darussalam, Guam, New Zealand, New Caledonia, Singapore, Cook Islands, Macau, Malaysia, Republic of Korea, Wallis and Futuna.

No noticeable change in tuberculosis incidence-rate is reported from Fiji, French Polynesia, Papua New Guinea.

Irregular trends are observed in Kiribati, Laos, Niue, Philippines, Samoa, Solomons Islands, Tonga, Tuvau, Vanuatu.

The BCG coverage in the Region as a whole has been good; reaching in some countries over 90%.

2.3.2 Diphtheria

Starting from 1978 and particularly from 1980 there is clear downward trend of diphtheria incidence-rate in the Region as a whole, from 1.16 per 100 000 population in 1980 to 0.22 in 1986.

Epidemiological situation in the countries differs considerably. Eighteen countries have reported zero cases of diphtheria in 1986, 15 of them, for the last 13 years. These 15 countries are located in the South Pacific. In addition there are countries reporting sporadic cases of the disease, most probably importations: Brunei Darussalam, Hong Kong, Japan, Macau, New Zealand, Samoa, Republic of Korea, Singapore.

Steady and regular decrease of diphtheria incidence-rate is reported from China.

Irregular trend is observed in the Philippines with years of high incidence-rates, alternating with years of low incidence rates.

High incidence-rates are still reported from Democratic Kampuchea, Laos, Viet Nam.

Vaccination coverage against diphtheria for the whole Region is around 60% to 70%. In countries reporting zero incidence (Cook Islands, Fiji, French Polynesia, Guam, New Caledonia, Samoa, Tonga, Wallis and Futuna) immunization coverage have exceeded 70%.

2.3.3 Pertussis

In the Region as a whole pertussis incidence has fluctuated around 20-30 per 100 000 population. It is more widespread than diphtheria. Only 12 countries did not report pertussis in 1986, and some of them for several years (American Samoa, Cook Islands, Guam, Nauru, New Zealand, Niue, Samoa, Singapore, Tokelau, Tuvalu.)

Steady decrease of the disease is reported from Fiji (1982), Japan (1979), Republic of Korea (1984), Tonga (1982), Tuvalu (zero reports since 1981, Viet Nam (1983).

Since 1980 decreasing trend in incidence is notable in Kampuchea.

Immunization coverage against pertussis in the Region remained in the range of 60 to 70%, which is not enough to see its effect on the incidence-rate. The countries with higher coverage, 70 to 90%, decreasing trend is seen: Guam (97% in 1985 - no cases of pertussis), Hong Kong (80% and higher coverage - single cases of the disease), Japan (81-98% coverage - steady decrease of incidence), Macau (80-83% coverage - single case of pertussis), Samoa (80-99% coverage - no cases since 1982), Singapore (76-91% coverage - no cases since 1983). Kiribati, Papua New Guinea, Philippines, Vanuatu, Viet Nam, and Democratic Kampuchea with low immunization coverage do show continuing pertussis transmission at fairly high level.

2.3.4 Tetanus

The tetanus incidence-rate in the Region has been 0.18 per 100 000 population (1986).

In 1986 only 9 countries did not report incidence of the disease, 4 countries (Australia, Japan, New Zealand, Republic of Korea) reported incidence rate below 0.1 per 100 000 population. Incidence rate of 0.1-1.0 was reported from Brunei Darussalam, Fiji, Hong Kong, Laos, Vanuatu. Five countries reported incidence rate over 1: French Polynesia (1.2), Kiribati (1.6), Papua New Guinea (2.3), Philippines (1.6), Viet Nam (2.5).

2.3.5 Measles

During epidemic years, high incidence-rates in some of the South Pacific Island countries were noted: 1818 per 100 000 population in Cook Islands in 1980; 2361 in Kiribati in 1984; 800 in Nauru in 1977; 5090 in Tuvalu in 1980;

The acceleration in the measles immunization coverage is priority in most of the countries of the Region.

2.3.6 Poliomyelitis

Poliomyelitis incidence in the Western Pacific Region has shown decreasing tendency for the last eight years. With further acceleration of activities of the Expanded Programme on Immunization there is a good prospect for drastic decrease of poliomyelitis incidence and its ultimate elimination. The industrialized countries of the Region have introduced oral polio vaccination in early 1960s and its further expansion in developing countries in late 1970s with the inception of EPI.

Decrease started from the year 1980, when incidence rate was 92 per 100 000 population, reaching 22 in 1986, which shows more than 4 fold decrease. Country wise, the steady decreasing trend is reported from the Peoples Republic of China and the Republic of the Philippines; notable results are achieved in Malaysia and Republic of Korea where after steady decrease of polio incidence, zero cases are being reported for several consecutive years. The incidence trend in Viet Nam, Laos and Democratic Kampuchea is still showing epidemic pattern.

As many as 17 countries in the Region have had zero cases of poliomyelitis for the last 13-14 years (48.5%) 8 countries, or additional 22.8% have not had cases for the last 4-12 years and further 4 countries have had a single case.

Only 6 countries, or 17.1% report incidence rates of poliomyelitis, which is high.

Thus, two main positive trends, as far as polio incidence in Western Pacific Region is concerned, are as follows: continuously dropping incidence in the Region as a whole from the year 1980, and increasing number of the countries without reported cases of poliomyelitis.

The province-wise or region-wise information from the countries facilitates better epidemiological analysis and better understanding of what is going on in the field. For example, in 1986, in China the outbreak of poliomyelitis occurred in Guangxi and partially in neighbouring provinces. Also in Viet Nam in 1986 and 1987 poliomyelitis incidence was confined mostly to the southern and to less extent to Central Regions, compared with the incidence in Northern Region which was five times less. Such distribution of incidence correlates well with the levels of immunization coverage both in China and in Viet Nam: provinces and regions with low coverage have higher incidence levels.

The present polio situation was assessed in countries through a special questionnaire. All the respondents confirmed that poliomyelitis is a notifiable disease in their countries. And 80% indicated that a medical officer is the person who performs epidemiological investigation of every case of poliomyelitis.

Some differences are observed in immunization schedules. Only one country has accepted immunization of newborns.

Much controversy exists over the contraindication policy for immunization. Only two respondents indicated that they favour no "contraindication policy". Others still have 1-4 contraindications for polio immunization, among them: diarrhoea, high fever, debilitating conditions, immune deficiency, steroid therapy, rickets, acute infections. Thus the WHO policy on contraindication needs reinforcement.

The response to the question regarding the national target year for polio eradication was: seven have already reached the eradication stage, two put it at 1990, four - 1992, one in 1995.

WPR Regional plan of operation has been prepared with a target date for elimination of mild poliomyelitis by the year 1995. Confirmation of poliomyelitis in four countries is based on clinical findings only; seven countries base their diagnosis on clinical, serological and virological findings; two countries - on clinical and serological data. The countries have identified 21 national laboratories either for serological, virological or for both types of confirmation of polio cases. Interesting fact is that four Pacific Island countries identified their referral laboratory - in CDC, Atlanta. Twelve national laboratories expressed their willingness to be nominated as WHO collaborating centres for polio programme, one (in Singapore) has already been working as such.

3. CONCLUSIONS

- 1) Extensive support to the countries accelerating the programme to achieve higher coverage;
- 2) Gradually establishment of active surveillance for EPI target diseases and EPI information system;
- 3) Verification of absence of poliomyelitis in countries reporting zero cases and establishment of active case investigation and containment strategies;
- 4) Establishment of laboratory confirmation of poliomyelitis - to identify mild, vaccine associated or imported.