CHAPTER 3

PRACTICAL ASPECTS
AND GETTING THE PEOPLE TOGETHER
Getting started in the Western Pacific

After the 1988 resolution to wipe out polio in the Western Pacific Region by 1995, there was a period of about two years in which work, while intensified, largely followed the same strategies as before in most countries and within the Regional Office. Routine immunization was encouraged, and reports of polio cases were monitored. It was expected that if those two systems were gradually improved in every country, polio would eventually disappear.

Dr Sang Tae Han, then the Director of the WHO Western Pacific Region, was deeply committed to the goal of eradicating polio in the Region by 1995. From the beginning, he sought to lead the Western Pacific according to the best evidence available from eradication initiative experiences in the Americas and elsewhere.

In August of 1990, WHO staff made a trip to Japan, where they met with Dr Isao Arita. Dr Arita had been involved in the eradication of smallpox in Africa in the 1960s and 1970s, and was the Chief of the Smallpox Eradication Unit at WHO Headquarters in Geneva for the final stages of that campaign. After smallpox had been eradicated, he had returned to Japan where he worked for the Ministry of Health and also headed the nongovernmental organization ACIH (Agency for Cooperation in International Health, which would become an important contributor towards polio eradication activities). Dr Arita, who was involved in the polio eradication effort in the Americas, was to play a very important role in polio eradication in the Western Pacific
Region. During their visit to Japan, WHO staff again discussed the status of the polio eradication initiative in the Region, and the fact that success in the Americas had required supplementary immunization on a large scale.

**Establishment of the Polio Eradication Task Force**

In 1990, a review meeting was held in the WHO Regional Office for the Western Pacific to review the progress towards polio eradication. Judging that much more decisive action needed to be taken to achieve eradication by the 1995 target date, a Polio Eradication Task Force was appointed, with Dr Jong-Wook Lee as team leader. Dr Agostino Borra was operational officer, and the other original members were Dr Shigeru Omi, Mr Alan Schnur, and Dr Sima Huilan.

The Task Force was well qualified for the job. JW Lee was a skilled manager and, as Regional Adviser for Chronic Communicable Diseases, in charge of tuberculosis control and leprosy elimination activities. Agostino Borra was medical officer for the Expanded Programme on Immunization (EPI) and Control of Diarrhoeal Diseases, with many years experience in the Western Pacific Region. Shigeru Omi – who would go on to become the first Regional Adviser for EPI in the Western Pacific, and subsequently Regional Director – had a good knowledge of virology, having worked with hepatitis B virus. He had worked in a wide range of medical and public health positions, including serving as sole medical officer in remote islands in the Pacific, and was recruited from Japan as a medical officer specifically to help progress the polio eradication initiative. Alan Schnur had long experience in EPI cold chain and logistics, and had been involved in the smallpox eradication initiative in Ethiopia, Somalia, India and Bangladesh. Sima Huilan was the Regional Adviser in Health Laboratory Technology. She would become responsible for setting up a regional network of specialized polio laboratories.

That original Task Force worked long hours on its new task. Polio-free status for the Western Pacific must have seemed a long way off at that time, but they had been given a job to do and were confident that the goal could be achieved. Some were galvanized by their personal experiences and the success of other disease eradication efforts. Others, looking back, say there was never any thought of failing.
It was recognized that the work required was well beyond the capacity of the small number of staff in the regional team who had formed the original Task Force. Many other people with different and specialized skills joined the team, and eventually the day-to-day polio eradication efforts were transferred to a newly formed Expanded Programme on Immunization (EPI) unit, with Dr Shigeru Omi as Regional Adviser.

As additional resources were mobilized, more key staff joined in and played crucial roles in the successful eradication effort. Dr Julian Bilous joined EPI in 1991, in time for the second Technical Advisory Group (TAG) meeting. He was to play a key role in the eradication effort, able to synthesize many widely different ideas and then calmly write them down into coherent documents and plans. He later succeeded Dr Omi as Regional Adviser for EPI. Mr Chris Maher joined the team in 1992 and immediately provided essential support, especially in the area of field activities. His tireless efforts were an important factor in the eradication efforts. He went on to play an important role in the certification work and to become the Regional Adviser until August 2000. Dr Ray Sanders joined the team in 1993 and oversaw the implementation of the highly successful regional polio laboratory network. His combination of laboratory and management expertise made that formidable task possible. Other staff who joined the regional team while

If the Americas could reach zero polio, then the Western Pacific could too. At any rate, there was no time to think about the possibility of failure. There was too much work to be done.

The Task Force was instructed to prepare a plan of action for the Western Pacific Region, based upon the experience with polio eradication in the Americas. By that time, poliovirus circulation had been drastically reduced in that Region; the last case of polio was to be found the following year (1991). There was, therefore, already a wealth of experience with strategies to combat polio.
there were still polio cases included Dr Ville Postila, Dr Jacob Kool, Dr Yoshikuni Sato and Dr Sigrun Roesel.

It was recognized early on that placing experienced, motivated international staff at country level to support regional staff was essential for a successful eradication effort within the short time-frame before the target date. By 1992, it had become possible to assign international polio eradication staff in countries, funded by the Centers for Disease Control (CDC) Atlanta, Rotary International, the Japan International Cooperation Agency (JICA), the Agency for Cooperation in International Health (ACIH, Japan) or WHO. They included Mr Mauno Erkkila, Dr Yasuo Chiba, Dr Mact Otten, Dr Jessie Wing and Dr Lisa Lee in China; Dr Bernard Moriniere, Dr Kohei Toda and Dr Marcus Hodge in Viet Nam; Mr David Bassett in Cambodia and later in the Lao People’s Democratic Republic; and Dr Richard Nesbit and Dr Yang Baoping in the Lao People’s Democratic Republic.

JW Lee led the polio eradication team until 1994, when he left the Region to take up the post of Director of the WHO global programme for Vaccines and Immunization. Dr Omi took over the leadership of the Task Force when he became the Director of Communicable Diseases in 1995.

**Drafting a plan of action**

Dr Ciro de Quadros of the WHO Regional Office for the Americas (also known as the Pan-American Health Organization, or PAHO) had led the fight against polio in that Region, after also having been involved in smallpox eradication. He took time from his very busy schedule to travel to Manila for Thanksgiving weekend in November 1990 to meet with the members of the Task Force, share the Americas’ experience, and provide guidance for the preparation of the Western Pacific Region’s plan of action. Polio eradication had been identified as a priority in the Western Pacific Region and the development of the plan started immediately, based on the discussions with Dr de Quadros.
The true extent of poliovirus circulation in the Western Pacific Region was not known in 1990. The reporting systems in many countries were such that most cases (perhaps 90%) went unreported. Until then, there had been no analysis of the reported cases in the Region. In order to assess the situation accurately, Dr Omi prepared, by hand, a map of the Region showing, for each country, the number of reported cases of polio and the percentage of children given three doses of OPV, as well as other indicators. Countries were categorized into poliomyelitis-endemic and poliomyelitis-free, based on whether they had reported polio cases in the preceding three years. Those which were considered poliomyelitis-free were further divided into high-risk and low-risk, based on whether they had vaccinated at least 80% of their children in the same period of time.

Based on PAHO’s plans and experience, as well as on what was known at that time about the conditions in the Western Pacific Region, the Task Force rapidly drafted a Regional Plan of Action for the period 1991-1995. Support in that effort was provided by Dr Sieghart Dittmann, who worked with the Task Force as a consultant for six months and helped to rewrite important surveillance and epidemiology sections of the plan.

Establishment of a Technical Advisory Group

A Technical Advisory Group (TAG) on EPI and polio eradication had played an important part in guiding the initiative in the Americas. Based on that experience, a similar group was appointed to carry out the same function in the Western Pacific Region. Six internationally recognized experts on EPI and polio eradication were invited to be founding members of the TAG: Dr Isao Arita (Chairman), Dr Ken Bart (Vice-Chairman), Dr Anthony Radford (Rapporteur), Dr Dai Zhicheng, Dr N. Sakai, and Dr Nguyen Hoang Thuy. The terms of reference of the TAG were as follows:

1. monitor the situation of EPI and poliomyelitis eradication in the Western Pacific Region and the formulation and implementation of regional and national plans of action;
2. evaluate current strategies and practices and recommend suitable strategies for acceleration of the EPI and poliomyelitis eradication initiative, specific to the Western Pacific Region;
(3) promote understanding and support for the programme goals among technical institutions and bilateral, multilateral and private agencies, as well as political leaders; and

(4) advise the WHO Regional Director for the Western Pacific on the above points.

The first meeting of the TAG was planned for April 1991 in Tokyo, Japan. After agreeing on its terms of reference and mode of operation⁵, its first task would be to approve a plan of action for polio eradication in the Region based on the draft prepared by the Task Force. As it turned out, the TAG was in full agreement with the strategies developed by the Task Force, and approved the plan of action without significant alteration.

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⁵ See Annex 1: TAG: TOR, members, summaries of meetings.

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**Strategies for eradicating polio**

The key strategies proposed for eradicating polio, which were developed by the Task Force based on those used successfully in the Americas and subsequently approved by the Technical Advisory Group for use in the Western Pacific, were:

1. achievement and maintenance of poliovirus vaccine coverage of more than 80% of the target population;
(2) supplementary immunization activities, such as immunization days and mopping-up operations, aimed at interrupting wild poliovirus transmission;

(3) strengthening of disease surveillance aimed at the prompt detection and investigation of all suspected poliomyelitis cases, and the identification of factors responsible for those cases; and

(4) aggressive outbreak control, including containment immunization.

The strategies above are covered in more detail in subsequent chapters. They are actually very simple and straightforward conceptually, if not easy in practice. In order to wipe out polio, it was simply necessary to reach and maintain (through vaccination) very high levels of immunity among children. Within a population with high immunity levels overall, any small areas of low immunity had to be detected so that extra vaccination could be offered to protect children there. The best indicator that an area had low immunity levels would be the occurrence of a case of polio there. Every case of polio had, therefore, to be detected and dealt with rapidly.

“Easier said than done”

By early 1991, the newly established Task Force had developed the plan of action for polio eradication in the Western Pacific Region, complete with strategies to cover all aspects of the work from 1991 through 1995. Having a plan and strategies in place was an important step, but there was still a lot more to be done. Many did not really believe that the success in the Western Hemisphere could be duplicated in the Western Pacific Region.

Well over a quarter of the world’s population lived in the Region, in a great diversity of settings. The country with the largest population – China, with well over a billion people – had just suffered a large outbreak of polio and still had widespread transmission of virus. Some of the least developed countries in the world – such as the Lao People’s Democratic Republic - were also in the Region. Polio was not high on their lists of priorities, among all the other problems they faced.

Several countries were embroiled in conflict. Cambodia was only just emerging, in 1991, from two decades of vicious civil war, which had destroyed much of the country. The outside
world had had very little contact with Cambodians during that time. The Philippines and Papua New Guinea each had smaller-scale rebellions within their territories.

Some of the most rugged terrain and most isolated groups of people in the world were found in the Western Pacific Region. It was not unusual for people in Papua New Guinea to live several days’ hard walk away from the nearest health centre. In such settings it was impossible even to know how many cases of polio were occurring.

The Americas had had the advantage of a small number of common languages. By contrast, in the Western Pacific Region, Papua New Guinea alone had over eight hundred languages, and there were many more – some with different scripts – in the Region. Even something as basic as communication was going to be much more difficult in the Western Pacific.

Another advantage the Americas had possessed, which was lacking in the Western Pacific Region, was a large “moat” surrounding it on all sides, which tended to limit the spread of poliovirus from other regions. Countries of the Western Pacific, by contrast, bordered other regions containing some areas where polio was still heavily endemic.

Nevertheless, the Region had resolved to eradicate polio, and some people believed – no matter how great the obstacles - that it could be done. And so they set to work.

The first question was how to obtain all the extra vaccine that would be needed.

### Extra vaccine requirements

Most countries were already giving oral polio vaccine routinely to most of their children, but the plan was now to give extra doses to all children aged less than five years in large parts of the Region. In China alone that would amount to over a hundred million children. Each child needed two doses of OPV, a month apart, and that would be repeated each year from late 1991 until the end of 1995. Then there would be a need for smaller (but still large) amounts of vaccine to give to children in areas where polio was found or suspected (so-called “mopping-up” operations). Also, routine vaccination had not only to continue but also be extended to greater numbers of children.
The manufacturers of the oral polio vaccine were able to produce enough for requirements, but it would cost a lot of money to obtain all the vaccine. The first priority was China, as that was where 90% of the polio cases in the Region were occurring.

The cost of extra vaccine

At that time, a dose of oral polio vaccine cost about five cents American. The rough estimate for the regional Plan of Action, which did not take inflation or price changes into account (and also did not include Cambodia, which at that time was still in the midst of a civil war and cut off from the rest of the world), was that US $67 million would be needed for vaccine alone over the five years.

That was the amount that was expected to come from outside the countries. Those countries that were expected to carry out supplementary immunization activities were also the poorest countries in the Region (compared with their populations) and could not afford the huge amounts of extra vaccine.

It was recognized that countries would contribute most of the running costs of the operation. However, some extra funding would be required for laboratory and other equipment, specialized staff, training and supervision, etc. US $100 million was the estimate for the total amount that would need to come from external donors.

Establishment of an Interagency Coordinating Committee

Several organizations – both governmental and nongovernmental - had already given financial and other support to polio eradication activities in other parts of the world, and even – on a smaller scale – in the Western Pacific Region. Some - like Rotary International, the Centers for Disease Control and Prevention (CDC) in the United States, and the United Nations Children's Fund (UNICEF) – were already very experienced in such work. The Western Pacific Region could look to them as senior partners in polio eradication. Many others – notably the governments of Australia and Japan - were to join the effort as particular supporters of the Region.

Contributions were welcome from any group, and the list of those who eventually participated in funding the polio eradication work in the Region is long and distinguished. In the early days, however, that strong coalition had not yet been established. Donors had first to be
convinced that countries of the Western Pacific Region had the will, capacity and appropriate guidance to carry out such a huge task, in order to ensure that their money would not be wasted. Once donations were forthcoming, it would be necessary to coordinate their use according to needs throughout the Region.

In the Americas, a multi-agency committee had been established to raise and coordinate the flow of funds needed for the polio eradication initiative. The Task Force knew that such a body would also be vitally important in the Western Pacific Region. Representatives of some potential donor organizations had, therefore, been invited to the first meeting of the TAG in Tokyo, where the concept was introduced in an informal meeting. It was decided to establish an Interagency Coordinating Committee (ICC) for the Region, and to hold its first official consultation alongside the next TAG meeting.

The Regional Interagency Coordinating Committee was duly established in Cebu, the Philippines, in December 1991, with the adoption of specific terms of reference around provision and coordination of support for the Expanded Programme on Immunization and the polio eradication initiative. Mr Brian Knowles of Rotary Australia was elected chairperson, a post he was to hold for over a decade, until the Western Pacific Region had been declared polio-free.

The Region was fortunate in having Brian Knowles to lead its ICC. A committed Rotarian since 1960, he had been on the international board from 1986 to 1988, the first intense fundraising years when Rotary clubs around the world had raised US $240 million for polio eradication. As early as 1990, he had been involved, on Rotary’s behalf, in the establishment of a new facility for polio vaccine production in China, and was thus already familiar with the largest country in the Region. He brought to the position a great belief in the necessity and achievability of polio eradication, and a spirit of selfless voluntary service combined with a gift for facilitating cooperative collaboration. All those qualities helped the ICC to develop into a highly effective organization, without which the polio eradication initiative could not have achieved its ultimate success.

Rising costs of international vaccine

Before the second TAG meeting and the establishment of the ICC, the international manufacturers of oral polio vaccine had advised that the price of the vaccine would rise in 1992, from five to seven cents per dose. The cost of polio eradication activities would, therefore, rise considerably, unless vaccine could be obtained

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6 See Annex 2: ICC terms of reference and summaries of meetings.
at a lower price. Up until that time, there had been no donations from external donors for the purchase of vaccine. Even after the establishment of the ICC, there was a period of about eighteen months before the first large donations for vaccine were secured (although smaller amounts of money had been made available for other aspects of the programme). The serious shortage of vaccine was forcing countries to establish contingency plans for supplementary immunization, including lowering the target age groups and selecting high-risk districts rather than holding full national immunization days. Some flexibility was needed, but cutting activities too much would put the success of the whole endeavour at risk.

**Locally-produced vaccine**

At that stage, China was already producing oral polio vaccine – in the form of solid sugar and milk balls or *dragees* - at a fraction of the cost of international vaccine. However, it did not meet the World Health Organization’s standards for heat stability. Therefore, any money donated through UNICEF or WHO could not be used to buy vaccine from those sources if the organization were to honour its own guidelines.

The Chinese vaccine met the standards except on one parameter – it was not quite stable enough when exposed to high temperatures. That meant that there was a risk of it being inactivated if it could not be kept frozen or cold enough until used. In all other ways it was acceptable – effective and safe. It had been used for routine immunization in China since the 1960s.

The Polio Eradication Task Force at the Regional Office had to decide which was better to use international funds to purchase the Chinese vaccine for national immunization days in China, or to risk not having enough vaccine to carry out those huge events at all. It was clear to them that using the Chinese vaccine was the best option. However, the Technical Advisory Group and the leaders of WHO’s global immunization programme needed to be convinced as well, and could not disregard the standards that had been set.

**Emergency situation**

The matter of vaccine supply for mass immunization in China was brought to the third TAG meeting in Beijing, China, in October 1992. There was discussion of different options, such as upgrading the Chinese vaccine
manufacturing facilities to produce liquid polio vaccine. Even if that proved feasible, it would take a year before improved production could begin. Eventually the TAG recommended that, given the emergency nature of the situation, WHO should accept temporarily procuring the Chinese vaccine in order to ensure that mass supplementary immunization could proceed. It was also agreed that countries could target age groups other than the officially recommended group of all children under five years for supplementary immunization – for example, depending on the circumstances, they could aim national immunization days at children under four years. Based on the fact that almost all cases of polio in China were occurring in that age group, and in order to make the best use of the limited resources, the Chinese authorities decided to do just that, and the Chinese vaccine manufacturers increased their production to meet requirements.

WHO continued to support local production of vaccine in Viet Nam as well as in China. Vietnamese-produced OPV was accepted for international funding from 1994 onwards. That was a much more cost-effective way of procuring vaccine. Apart from the fact that the price per dose was much lower, there were also lower transport costs involved. Moreover, by producing much of the vaccine needed within the Region, the Western Pacific was able to reduce its considerable demand on international vaccine suppliers. In the case of Chinese vaccine, an additional benefit was that considerably less vaccine was wasted because each dose was a discrete solid ball.
By the time of the third TAG meeting and the second ICC meeting in Beijing in October 1992, the vaccine shortage was becoming a critical issue for the polio eradication initiative. Four years after the initial decision had been made to eradicate polio in the Region, and with only three years to go before the 1995 target date, no country had been able to carry out full-scale national immunization days. The TAG made an urgent call for increased support and expressed concern that an historic opportunity would be missed if additional vaccine were not provided for China. Member States were themselves providing additional funds from national sources, but were not receiving adequate external support.

Dr Lee, Dr Omi and Mr Schnur worked persistently to convince partner agencies to strengthen their vision. Dr Omi made several trips to meet senior officials in the Ministry of Foreign Affairs, Japan, literally begging for funds, at the same time collaborating with Senior government officials of Member States where the funds were badly needed. Due to the level of urgency, there were occasions when he would leave for Beijing from Tokyo in the early morning and return from Beijing late the same day, undaunted by any hazard.

As a result of collaborative efforts, donors were stimulated to increase their contributions. Rotary was able to divert one million dollars, destined for use in another part of the world, to China for vaccine. That Rotary funding, supplemented with Government support, enabled the purchase of enough vaccine to immunize every child under the age of four years in China. Although the age limit (four years) was lower than that recommended globally, epidemiological evidence from China indicated that the lower age limit would be adequate for China. Furthermore, the Rotary funding acted as a catalyst for further donations. Other organizations overcame the constraints of their funding and approval processes to make money available in record time.

The Japanese Government wished to support countries with long-term investment, and vaccine was seen initially as a consumable product. However, vaccination produces a long-term effect. Government officials from different agencies in Japan worked very hard to identify the critical needs for polio eradication. As a result of all their efforts, Japan began to provide support for vaccines in many countries of the Region. At that time, it was new for countries to request vaccine support from Japan in order to get the vaccine on time. Japan made great efforts to coordinate with the procurement agencies and the requesting countries. The
Japanese Government agreed to provide two million dollars’ worth of vaccine for China’s national immunization days in 1993, 1994 and 1995. Japan also continued to provide large amounts of funding for other countries in the Region through its Ministries of Foreign Affairs and of Health and Welfare, and through the Japan International Cooperation Agency (JICA).

There was also need for technical support in such areas as estimation of vaccine requirements, a task which WHO was able to fulfill.

**Continuing financial support**

The most difficult part of any endeavour is often simply getting started. After the first large donations were received, the work of polio eradication could enter a new phase, which itself attracted further support. At the same time, all the parties involved were learning to work together more effectively.

WHO changed its approach in presenting the needs for funding. Strong economic evidence was presented to show the benefits of eradicating polio. For instance, it had been calculated that the savings from reduced treatment and rehabilitation needs for polio sufferers would be enough to justify polio eradication on their own - even without taking into account the savings from being able eventually to stop vaccinating. Also, funding requirements were broken down into manageable chunks for presentation, and linked to use. Thus, instead of saying that a hundred million dollars was needed over the next five years, it would be stated that (for example) sixteen million doses of OPV were needed for national immunization days in Viet Nam in 1993. Donors could more easily imagine providing that kind of contribution, and also had confidence that the estimates were more accurate when presented in that way.

ICC meetings came to be held on the penultimate day of each TAG meeting, to allow the representatives of donor organizations to be present at the TAG meetings and hear all the presentations and discussions. The ICC also changed the format of its meetings to allow time for small group discussions. Both those changes proved very beneficial.

Brian Knowles remembers an incident at the third ICC meeting in Ho Chi Minh City, Viet Nam, in June 1993 as indicative of the spirit of cooperation that existed among the countries and the funding partners. The Government of Viet Nam wanted to hold its first national immunization days in that year, but was some two million dollars short of funding for vaccines. In order to plan the activities appropriately,
they needed a commitment of funds almost immediately. Through discussions in the coffee break, representatives of two major organizations discussed the possibility of each providing half the money, if the other could arrange to match the commitment. Amazingly, approval was gained overnight for each of those amounts. It was announced before the end of the meeting that Rotary International and JICA would meet the cost of the vaccines. Viet Nam could proceed with its preparations for national immunization days.

Non-monetary support

Of course, contributions other than money were also needed. The value of the time and energy given freely by millions of people through the course of the polio eradication initiative cannot be estimated. Other contributions included the use of business premises for vaccination posts, vehicles for transporting vaccine, courier services for shipping samples, airtime and advertising space for publicizing events, and so on. In the process of holding the first successful national immunization days, considerable experience was gained in mobilizing support in each country. From high-level government leaders to local people with time, skills or resources to share, a wide variety of people joined in and gave valued assistance.

Momentum builds

The first Chinese national immunization day, held in December 1993, was the largest public health event ever, and attracted political support from the very highest levels. The success of that event, following on from that of the national immunization days in the Philippines in April and May 1993, convinced many people that it could be repeated elsewhere in the Region, and gave hope that polio could be eradicated after all. Energy was created, which – along with experience – enabled other countries to hold their own successful supplementary immunization activities. Each of the large-scale, highly publicized events brought more people, more energy and more money into the work of polio eradication.