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## The WHO's Classical Approach to Disease Eradication

Virtually upon its creation, and at the urging of the organization's member states, the WHO secretariat immediately set about exercising its newly bestowed powers in disease prevention, control, and eradication. This chapter explores three of the WHO's disease eradication initiatives – the MEP, the SEP, and the WHO's attempts to eliminate tuberculosis (Global TB Programme). Drawing on Haas' typology of IO learning (1990, pp. 17–49), attention will be given to identifying where there is evidence of epistemic communities having formed alliances with key partners to advance their own agenda. In addition, the chapter identifies and compares the roles that the WHO secretariat assumed throughout the eradication campaigns, as well as the organization's overall governance approach. In so doing, it is apparent that there is evidence to suggest that the IO learned from past mistakes and developed a standard or classical approach to managing infectious disease threats – an approach which, as will be discussed in the next chapter, was then radically reshaped around the time of the 2003 SARS outbreak.

These three campaigns – the MEP, SEP, and the Global TB Programme – were selected principally because they represent some of the WHO secretariat's first attempts at fulfilling the IO's health-for-security mandate. The MEP, for instance, was the first global campaign ever launched to eradicate a disease, and yet it proved a monumental failure. In contrast, the SEP, which was launched even as the failures of the MEP were becoming apparent, is hailed to this day as the WHO's greatest success. Like the MEP, the WHO's programme to eradicate TB also proved unsuccessful, resulting in the bureaucracy downgrading its objective from eradication to disease control, exemplified by the current (and ongoing) Stop TB campaign. Nonetheless, despite the three initiatives' varying levels of success, a clear management style emerged – one in

which the WHO secretariat can be seen to perform particular roles and functions while eschewing its constitutional authority to direct international health work, preferring instead to adopt a more circumspect approach of facilitating cooperation wherever it was (and is) more politically feasible.

### **The Malaria Eradication Programme**

The world's first-ever truly global attempt at eradicating a communicable disease was officially launched by the Eighth WHA in 1955 with the adoption of resolution *WHA8.30 Malaria eradication*. With this one act, governments around the world committed both themselves and the WHO to an unprecedented public health initiative: the elimination of all forms of human malaria.<sup>1</sup> The resolution, which encouraged all governments to intensify their efforts before *anopheline* mosquito resistance to insecticides became widespread, authorized the director-general to undertake measures aimed at persuading those governments not already pursuing malaria eradication to do so. The resolution also allowed for the creation of a new special account to finance the eradication programme, and under the terms of the resolution the director-general was permitted to solicit funds from both governments and private sector contributors for the purpose of financing the initiative. Most significantly, the resolution required that the WHO amend its policy of malaria control to that of eradication – a policy that ultimately proved disastrous for the IO's reputation. In fact, given that the failure of the MEP has often been attributed to the WHO's mismanagement, it is significant that the secretariat had initially advocated a policy of malaria control, only amending it to eradication when member states insisted in 1955 that the policy be changed.

By 1946 malaria epidemics had become a frequent, even yearly, occurrence in many parts of the world. Those countries ravaged by WWI were particularly adversely affected, and with the outbreak of hostilities in 1939 further disrupting the supply of anti-malarial drugs and causing extensive damage to healthcare infrastructure and medical services, the situation rapidly worsened (Goodman 1952, p. 142, Humphreys 1996). At the same time however, technological developments throughout WWII – particularly in the form of dichloro-diphenyl-trichloroethane (DDT) – appeared to offer for the first time the distinct possibility that malaria may actually be eradicable. As a result, the Interim Commission of the WHO determined that 'special attention' should be accorded to controlling the disease (WHO 1948a, p. 31), and in 1947 the Commission

established the Expert Committee on Malaria to determine the organization's policy on the matter.

Based on the Expert Committee's recommendations, the WHO secretariat subsequently instigated a limited technical assistance programme of malaria control as early as May 1948. The position adopted by the organization was therefore significant in that it contrasted with a small, albeit growing number of prominent public health practitioners who advocated that malaria eradication should be pursued through the widespread use of DDT residual spraying and orally administered medications such as chloroquine. Instead, the Expert Committee had urged that the IO should adopt policies and procedures that utilized a variety of control methods and techniques. Moreover, rather than envisaging an aggressive role for the WHO, the Committee recommended that the organization's bureaucracy limit itself to that of evaluating existing control measures, providing expert advice, conducting disease surveillance, and promoting 'the production of insecticides and therapeutic agents and improvement of their distribution' (WHO 1948d, p. 5). Where necessary and upon request, 'demonstration teams' of medical personnel would also instruct national health authorities in the best disease control practices (Siddiqi 1995, pp. 128–130). The role proposed by the Expert Committee for the WHO was thus nominal, providing technical assistance only where required while advancing a policy of disease control.

Nevertheless, by 1955 it had become clear that the WHO's stance towards malaria eradication was untenable. Somewhat ironically, according to contemporary standards the WHO's initial policy of malaria control would be viewed as rational and measured, but by the mid-1950s the IO's policy was viewed as redundant and incongruent with the scientific consensus of the time. A number of campaigns to eradicate malaria were already underway, headed by such organizations as the Rockefeller Foundation, the UNRRA, the UN International Children's Emergency Fund (UNICEF), and the PASB. Moreover, in contrast to the WHO's policy the other IOs were utilizing DDT residual spraying as their central strategy and were observing 'spectacular results' (WHO 1947b, pp. 182–184). Intriguingly, the fact that resistance to DDT was appearing failed to dissuade the medical establishment (Calder 1958), instead spurring them to advocate even more vehemently that eradication could be achieved if – and only if – action was taken immediately. The WHO was subsequently deemed to be the most appropriate vehicle for achieving such action. Sensing that considerable international momentum had built, little resistance was offered by the WHO secretariat when it was

proposed that the IO should amend its control strategy to that of eradication.

Following the adoption of resolution WHA8.30, both the WHO's existing policy and activities underwent some notable changes. The most apparent and immediate effect was that the policy of malaria control was expunged as the WHO's senior executives – many of whom were malariologists who had by the mid-1950s been advocating eradication for years (including, notably, the director-general)<sup>2</sup> – shifted the organization's focus to pursuing the elimination of all forms of human malaria. Turning to the WHO Expert Committee on Malaria for guidance, the methodology the WHO proposed for achieving this goal consisted of four clearly defined phases: preparatory, attack, consolidation, and maintenance (WHO 1956a, pp. 3–4); and at the urging of the IO, every national campaign was subsequently modelled on this one design (Gramiccia and Beales 1988, p. 1349, Bruce-Chwatt 1998, p. 50).

Significantly, the WHO additionally advocated that the global eradication could be realistically achieved within one decade so long as each country adhered to the recommended timeframes and protocols (WHO 1955, p. 199, Siddiqi 1995, p. 165). For those countries that lacked their own expertise the WHO then issued a series of highly prescriptive, very detailed protocols produced by the Expert Committee on Malaria that covered such topics as the type of compressors to be used in spraying; the amount of insecticide required per square metre; even the structure and number of personnel required for DDT spraying squads. Every country undertaking an eradication programme was advised to incorporate these protocols into their respective campaign, and WHO consultants were made available to assist each national health authority to comply.

By 1958 some 63 countries had either commenced new campaigns or converted their former malaria control programmes to pursue eradication (Yekutieli 1981, p. 469). Demand for WHO guidance and technical assistance grew rapidly as a result, prompting the organization to virtually double its MEP-dedicated staff in the first 10 years of the programme's operation. Particular emphasis was placed on the speed and efficiency of reporting and, in contrast to the secretariat's usual tendency to rely on national health authorities to report cases and/or outbreaks at their own discretion, the WHO provided its own staff to assist in the collection of data. At the WHO headquarters in Geneva, the secretariat also intensified its role as a sorting house for epidemic intelligence data, disseminating this information as fast as possible to assist in the planning and implementation of eradication campaigns. In the field, WHO personnel worked with national health authorities to apply the

organization's policies with military-style precision, ensuring that – as much as possible – each country's eradication programme adhered to the model, timeframe, and recommendations of the secretariat (Cochi et al. 1998).

It is in this regard that the WHO was observed to adapt a highly structured approach to malaria eradication and, at least initially, the global campaign appeared to validate this rigid, command-and-control approach. Seeking to attest to the programme's usefulness, the WHO was observed to claim as early as March 1957 that at least 10 countries had already either 'practically or totally' achieved eradication (WHO 1957a, p. 533). While this was later proved to be premature, by 1967 the WHO had certified 13 countries as having completely eradicated malaria (WHO 1968a, p. 165), and by 1968 it had been estimated that some 997 million people living in previously malaria-endemic regions had been freed from the risk of transmission (WHO 1969a, p. 109). In fact, even in spite of the later criticisms, the programme did achieve amazing results and was a remarkable accomplishment. As Beales and Gilles (2002, p. 111) observe:

The achievements of the WHO Malaria Eradication Campaign were quite remarkable at a time when no form of health services whatsoever penetrated into most endemic villages and there were no roads, bridges, railway lines, airports, electricity or telephones and, therefore, very limited population movements. Much of the work was carried out on foot, by boat, by donkey, horse or camel back where vehicles could not penetrate. Millions of people were freed from the burden of this disease and large areas of land were opened up to agriculture and industrial development because of it.

Despite these notable achievements, however, in the end the WHO failed in its attempt to eliminate all forms of human malaria, and the MEP was officially suspended in 1973. The closure of the MEP combined with the recognition that it had fallen short of its target, not surprisingly, reflected poorly on the WHO as the organization charged with ensuring the programme's success. Moreover, many of these criticisms were not without cause. As can be observed from even the brief summary provided above, while in one sense the IO may be assumed to have acted as envisaged – fulfilling its role as the directing and coordinating authority in international health – at the same time, the inflexible, authoritarian style of governance employed by the WHO bureaucracy arguably contributed to the programme's failure.

For example, one of the first recognizable limitations of the MEP was the evident lack of planning prior to the programme's rollout. As noted above, it had been initially suggested by the WHO in 1955 that global eradication could be achieved within 10 years of the programme's commencement. Each individual national campaign was subsequently designed according to this timeframe, and the various financial contributors co-opted into the global campaign were assured that their support would only be required for a correspondingly brief period (see, for example, Black 1986, Siddiqi 1995). Operational, logistical, and technical difficulties soon demolished the projected target date, however; and given that little scope within the planning stage had been granted for extensions, contributors and supporters of the programme understandably became disillusioned when the targets were not achieved. One of the consequences of this disillusionment was that the major donors, namely UNICEF and the government of the United States, began to impose harsher criteria under which their funding would be provided (Black 1986). As evidence increasingly began to emerge in the late 1960s that the original target date was not going to be achieved, and that even the goal of eradication might prove elusive, both major donors completely withdrew their financial support.

Inflated, unrealistic expectations also contributed to a level of disillusionment amongst member states involved in the programme. This was observed to have a direct negative impact upon a limited number of national campaigns, particularly when operational and technical difficulties such as mosquito resistance and external aid shortages were encountered that had not been adequately planned for (WHO 1960a, 1967a). In many developing countries, already lacking sufficient infrastructure to support a prolonged eradication campaign, some of these impediments proved too costly, resulting in their abandoning the global programme in all but name (WHO 1965a, Gupte et al. 2001, Tren and Bate 2001). Such outcomes further complicated the WHO's efforts to shore-up ongoing support for the programme as the anticipated declarations of complete eradication consequently fell short of the campaign's earlier achievements.

Yet a further complication of the WHO's governance of the MEP, and one which certainly contributed to the programme's ultimate demise, was the lack of autonomy granted to individual national campaigns. As noted above, under the terms established by the WHO, each local programme was to adopt the four-phase method for malaria eradication that relied overwhelmingly on the DDT residual spraying technique.<sup>3</sup> According to this strategy, which was overseen by the organization and

linked to the provision of funding and resources, each local campaign was required to focus primarily on eradicating the vector of malaria transmission by spraying every household with DDT. Significantly though, the WHO's policy completely ignored 'non-human' dwellings such as stables and barns, under the mistaken belief that malaria-carrying mosquitoes would not reside there (Gramiccia and Beales 1988, p. 1353). The corollary of this decision was that a key vector habitat was left untreated, raising the likelihood that re-infestation of human dwellings would occur. While this was just one example, various other problems relating to the lack of local authorities' autonomy to amend this strategy soon manifested themselves as well.

For instance, one of the first difficulties to emerge as a direct result of the inability to adapt the central strategy of DDT spraying was the challenge presented by insecticide resistance. Provoked by the programme's over-reliance on the one chemical, by 1968 it was noted that some 56 species of mosquitoes had developed resistance specifically to DDT (WHO 1970). The end result of this development was that the global campaign's achievements were gradually, steadily reversed. Yet because local campaigns were actively discouraged from either amending or employing other proven control methods such as the application of alternative insecticides or the supply of anti-malarial medications (WHO 1956a, Bruce-Chwatt 1998), the WHO's decision to retain central administrative oversight of local campaigns paradoxically undermined the very effectiveness of the global programme itself.

Problems arising from the lack of local autonomy in being able to amend the strategy of residual spraying also manifested in other ways as well. Specifically, in countries that possessed a high proportion of nomadic population groups, many of whom possessed no permanent dwellings, either sleeping in the open or in semi-permanent structures that were not fully enclosed, the strategy of residual spraying was often rendered useless (WHO 1960c, pp. 1–4). In other countries such as Thailand, Laos, and Vietnam, whose populations lived in mountainous regions and very humid climates, walled structures were not commonly found, making the central strategy of the MEP almost entirely redundant (Gramiccia and Beales 1988). Added to this were general concerns regarding the environmental impact of widespread DDT spraying, particularly on flora and fauna (Stapleton 2004). Yet despite these considerations, often there was very little provision for local authorities to amend their respective campaigns to meet local conditions, resulting in the corresponding outcome that the MEP was not achieving the results that had been promised.

It is also pertinent to note at this juncture that the inflexibility regarding the central strategy of DDT residual spraying arose, at least in part, from an earlier decision of the WHO bureaucracy not to undertake research into developing new malaria eradication techniques. This evasion of the IO's constitutionally mandated obligation notably occurred at the commencement of the programme, as it was naively believed at the time that existing technologies were sufficient to achieve global eradication. This belief, based on the Expert Committee on Malaria's recommendations, allowed the WHO's senior leadership to adamantly maintain that global eradication could be achieved through the rigid application of DDT and the oral administration of chloroquine alone. As such, granting local campaigns the ability to deviate from this policy was perceived to threaten the success of the overall programme and should not, therefore, be permitted (Fenner et al. 1988). In the end, the WHO's decision to avoid undertaking further research on malaria eradication techniques contributed to the overall collapse of the programme.

Finally, one of the foremost operational limitations of the programme, and of the organization that correspondingly administered it, was the complete exclusion of large malaria-endemic regions. Indeed, two groups of countries were purposely debarred with the full consent and knowledge of the WHO – the first reportedly on technical grounds and the second on the basis of political considerations. The first group of countries, located in sub-Saharan Africa, were excluded on the basis that malaria was assumed to be far too endemic, and that the countries were far too underdeveloped for the programme to even be attempted (WHO 1957b). This decision, which was entirely antithetical to the concept of global eradication, thereby left the region that suffered the highest prevalence of malaria completely untouched. The second group of countries, consisting of the People's Republic of China, North Korea, and North Vietnam, were largely excluded on the grounds of their status as non-member states. While their exclusion reflected equally on the governments of these countries – each of whom had declined to join the WHO and the global effort for their own political reasons – little attempt was made to encourage their inclusion. The corollary of this development was that even if the programme had succeeded in every other region of the world, their continued exclusion would have undermined the global campaign's overall objective of complete eradication and raised the prospect of re-infestation once the attack phase of the MEP had been completed.

From the above exegesis it can thus be surmised that the WHO adopted a very particular style of governance throughout the duration of the MEP.



The IO not only functioned as the international community's directing and coordinating authority, it also performed three very distinct roles: that of epidemic intelligence consolidator, policy prescriber, and government assessor. In the first instance, for example, rather than encouraging that new research should be conducted into improving eradication techniques, the organization's bureaucracy, assuming that it had obtained sufficient understanding of how to achieve global eradication, consolidated the scientific community's existing knowledge into very prescriptive, detailed instructions for implementation. On the basis of the medical advice provided at the time, the WHO bureaucracy assumed that alternative options were irrelevant and that new research was unwarranted. Further, and explicitly related to the above, although the WHO did recognize the importance of disease surveillance and continued to collect, analyze, and disseminate the information it received, the IO's bureaucracy failed to utilize this information to consider the impact of its own policies. The WHO thus simply consolidated the epidemic intelligence it obtained, passively and uncritically accepting that the programme's overall lack of progress (and eventual failure) was attributable to poor execution by member states.

Surprisingly, and in spite of the above, the WHO also assumed the role of policy prescriber, dictating to countries what, when, where, and how they were to construct their respective eradication campaigns. Of course, as outlined above, it has to be acknowledged that the WHO did not generate the initial policy of malaria eradication – this was instigated by member states in a classic example of principal delegation. Nonetheless, once the IO was empowered to commence the global programme, it made full use of its constitutional authority. Intriguingly, the organization's bureaucracy accomplished this feat even though all reference to the WHO's directing authority had been purposefully removed from the 1955 WHA resolution, reportedly in respect to member states' sovereignty (WHO 1955, pp. 230–232, 239). Whether this development then derived from the fact that an eradication campaign of this magnitude had never previously been attempted, or from some misguided perception on behalf of member states that the recently created health agency possessed some previously unforeseen extraordinary competence, is unclear. The reality that nevertheless emerged was that governments the world over acquiesced to the WHO's authority, in many instances unswervingly adhering to its policies. Throughout the duration of the MEP, the WHO thus served as the international community's directing and coordinating authority, as originally envisaged by the founders. Yet the failure of the programme equally harmed the reputation of the

organization, its bureaucracy, and, as will be discussed further below, the WHO's attempts to undertake future global disease eradication campaigns.

Third, whether or not it emerged as an unintentional by-product of the WHO's methods, the organization's bureaucracy also effectively served as government assessor for a number of countries participating in the MEP. This was most clearly demonstrated when some of the programme's major donors threatened to withhold funding from those countries not adhering to WHO policies. Although not instigated by the organization itself, the bureaucracy nevertheless failed to intervene, thereby tacitly signalling their endorsement of the policy. The WHO's role as government assessor was also demonstrated by the IO's refusal to include certain geographical regions within the global campaign on the basis of technical and political grounds. In each of these circumstances the organization's bureaucracy, to all intents and purposes, acted as an assessor of member states, determining which countries were suitable candidates to receive assistance in eradicating malaria and which were not.

Ultimately, when combined, all three roles did enable the organization to then assume the position of lead technical agency. However, the WHO responded to this global challenge in an authoritarian, almost dictatorial manner, requiring member states to adhere to its policies or face the possibility that they would be viewed as international pariahs unwilling to assist in the elimination of one of the world's most debilitating diseases. The failure of the programme – as the IO's first major initiative – understandably (and perhaps appropriately) resulted in raising serious concerns about the utility and benefit of the new universal health agency. The MEP thus had a significant impact upon the organization, both internally as the bureaucracy faced the reality that it had failed to achieve the goal of eliminating all forms of human malaria, and externally amongst member states dissatisfied with the IO's performance and competence.

## **The Smallpox Eradication Programme**

The SEP remains to this day the WHO's – and quite possibly, the international community's – greatest achievement. The programme itself was executed in two distinct stages, and within 11 years of the intensified phase of the programme commencing, the last recorded case of human-to-human transmission occurred on 26 October 1977. Some three years later, after suitable time had elapsed to ensure no further transmissions transpired, the world was declared free of smallpox by the 33rd WHA on

8 May 1980. The WHA's declaration was momentous, signalling not only the successful completion of an international effort to eradicate a highly contagious, life-threatening disease, but also that more than 3,000 years of human suffering from smallpox had now finally come to an end.

It is therefore somewhat ironic, given that the SEP was so successful, that the global campaign suffered from a pervasive lack of interest from its foundation. In fact, although the triumph of the programme has been frequently attributed to the organization's leadership (see, for example, Henderson 1987a, Pratt 1999), it is interesting to note that with the exception of the WHO's first director-general, Dr Brock Chisholm, the IO's senior bureaucracy were extremely hesitant, even averse, to the suggestion of launching a smallpox eradication campaign. Further, in direct contrast to the MEP, the WHO's bureaucracy persistently displayed an unwillingness to provide global leadership on the matter, and this reticence continued even well into the intensified and final stage of the programme as the prospect of eradication was imminent.

The notion of launching a global campaign to eradicate smallpox was, intriguingly, first tabled at the Sixth WHA in 1953 by the then outgoing director-general, Dr Brock Chisholm. Seeking to build on the PASB's 1950 declaration to eliminate smallpox from the Americas, Dr Chisholm proposed that a global campaign would be a suitable endeavour for the newborn organization to pursue and that smallpox was an appropriate candidate for eradication. The proposal was rejected despite its support by highly influential public health figures such as Fred Soper (Kerr 1970, Fenner et al. 1988). The reasons cited by delegates at the WHA included that smallpox was considered by many countries to be a regional and local health problem rather than a disease requiring a global solution. Moreover, it was felt that the cost of a global campaign would be prohibitive. Thus even two years later as the global campaign to eradicate malaria was officially launched, the WHA simply advocated that 'health administrations conduct, wherever necessary, campaigns against smallpox as an integral part of their public-health programs' (WHO 1973, p. 90). To be sure, the vast majority of member states demonstrated so little interest that the suggestion of a global campaign to eradicate smallpox was correspondingly 'quietly buried' by the WHO bureaucracy for four years (Fenner et al. 1988, p. 392).

In 1959, some four years after the MEP had commenced, the WHA's position on smallpox eradication was reversed. Somewhat paradoxically, the WHA's about turn came at the insistence of the Union of Soviet Socialist Republics (USSR), which had only recently re-engaged with the

organization after a brief period of estrangement. In an official report to the 11th WHA, the USSR's deputy health minister, Dr Viktor Zhdanov, urged the WHA to reconsider its former position, advocating that the complete eradication of smallpox could realistically be achieved within 10 years. Demonstrating its commitment to this objective, the USSR donated 25 million doses of the smallpox vaccine to the WHO to distribute as necessary (WHO 1959a), and sent various offers of assistance to countries throughout Asia and Western Africa where smallpox was known to be endemic (Fenner et al. 1988). Broadly endorsed by the majority of delegates, the WHA subsequently requested the new director-general, Dr Marcolino Candau, to prepare a report on the viability of a sustained global eradication campaign. The 12th WHA then approved the report and the director-general's proposals the following year (in spite of the serious misgivings of a number of member states), thereby launching the first stage of the organization's new worldwide strategy to eradicate the smallpox virus (Henderson 1977).

The initial SEP strategy developed by the WHO in the early 1960s was relatively straightforward: to vaccinate at least 80 per cent of all populations living in endemic countries, thus breaking the chain of transmission (WHO 1968c). Yet in direct contrast to the MEP, which by this time was operating at full capacity, in an evident case of IO shirking the WHO refused to provide detailed oversight of the programme, insisting instead that each individual country was to be entirely responsible for its own campaign's administration, execution, and expenses. The WHO maintained this position despite requests to the contrary from a number of its member states, stating that it would only provide technical assistance in the form of supplying vaccines (which were to be donated by member states and quality-tested by the WHO) and disease surveillance. If requested, one of the programme's five consultants could also be made available to advise on local implementation (Fenner et al. 1988). Not surprisingly, little progress was made; even in 1961, when several delegates of the WHA explicitly requested that the WHO redouble its efforts and establish 'a well-defined global eradication programme like the programme that existed in the case of malaria' (WHO 1962, pp. 284–286), the director-general actively sought to discourage the idea. Incredibly, this detached oversight of the initial phase of the SEP continued for at least the first five years of the programme's operation, much to the sustained frustration of the USSR and other member states who repeatedly called for greater involvement from the IO in generating support for and managing the SEP.

While somewhat perplexing by contemporary standards, several possibilities may account for why the WHO's leadership adopted this rather bizarre stance towards the notion of the SEP. One of the reasons proffered for why the bureaucracy was more committed to the MEP than the SEP has been that '[m]any of the leading figures in international public health during the 1960s had spent their formative years in vector control programmes, and it was with these that they were the most conversant and felt the most comfortable' (Fenner et al. 1988, p. 418). The implication of this observation is that because vector control programmes like the MEP focus on preventing disease transmission from animal hosts by eliminating the carrier of disease (namely the animal), the senior leadership of the WHO were uneasy about launching a global eradication campaign that targeted a disease such as smallpox which was only transmitted between humans. Likewise, while a freeze-dried version of the smallpox vaccine had recently been developed in Europe, its potential to replace the conventional vaccine (which, notably, was in short supply and required refrigeration to preserve it) was uncertain, as the new vaccine was still undergoing trials. Yet another possibility may simply have been that the WHO's resources were believed to be already stretched to their limit with the MEP, and the WHO's director-general was therefore reluctant to over-commit the fledgling IO. Finally, tensions between the USSR and the United States had also reached new heights in the early 1960s. It is therefore possible that the IO's senior leadership, conscious of these tensions, were reluctant to be perceived as enthusiastic about a project that was being heavily endorsed and supported by the USSR. Whichever the cause, the reality nevertheless became that even as international support emerged for the creation of an SEP special account to support the programme's implementation, the director-general sought to circumvent it becoming a reality (WHO 1966a, 1966b). Instead, it was maintained that the organization's primary focus should remain on conducting disease surveillance and the provision of quality-tested vaccines.

The IO's bureaucracy ultimately retained this non-interventionist stance towards smallpox eradication until the mid-1960s, when a series of internal and external factors forced it to become more involved. In January 1964, for example, Dr Karel Raska, a passionate advocate of smallpox eradication, was appointed Director of the Communicable Diseases Division. As head of this department, Dr Raska was able to successfully lobby the director-general to establish a Smallpox Eradication Unit within the WHO to provide support to those countries already undertaking eradication campaigns. Coinciding with Dr Raska's

appointment, several of the more influential (proximal) principals, frustrated with the lack of progress, successfully managed to convince their compatriots to pass a new resolution in May 1964, calling on the WHO to develop a specific plan for achieving eradication as soon as possible – pressure they sustained through into the following year, scrutinizing the secretariat's progress to date and then calling for even further effort to be taken. Added to this, in 1965 the US president, Lyndon B. Johnson, publicly declared his country's firm support of the SEP and committed considerable resources to eradicating smallpox throughout western and central Africa – an area that, at the time, had increasingly become a focus of Cold War activities (WHO 1968a, Glynn and Glynn 2004). As a direct result of this additional political pressure, in 1965 the director-general presented a new nine-point strategy to the WHA detailing how smallpox eradication could be achieved (WHO 1965b). Yet while new impetus was beginning to emerge, much to the sustained frustration of its member states, the organization's senior bureaucracy continued to procrastinate, undertaking further reviews that sought to assess the long-term viability of the programme.

Despite the WHO's senior leadership's apparent reluctance at this time, a confluence of events nevertheless occurred in the mid-1960s that, as will be discussed below, soon resulted in a transformation in the IO's management of the SEP. It can be observed, for example, that the creation of the Smallpox Eradication Unit and the appointment of Dr Karel Raska as its head created a bureaucratic cluster of like-minded individuals committed to the goal of smallpox eradication within the WHO – in effect, an epistemic community that achieved a particular prominence and influence within the IO. At the exact same time, external to the WHO, Dr Donald Henderson was appointed as head of the surveillance section of the US Centre for Disease Control and Prevention (CDC). Henderson had spent a number of his formative years in medicine, working in smallpox eradication campaigns. Following the United States' declaration of support for the SEP, Henderson became instrumental in developing not only the US eradication strategy in West Africa, but he also contributed heavily to the re-evaluation of the WHO's global programme and strategy (WHO 1966c, Glynn and Glynn 2004). Later, by 1968, Henderson had been appointed the SEP's director, ensuring a direct link between the epistemic community within the WHO and one of the most influential (proximal) member states, the United States. These factors – the creation of an epistemic community within the WHO, the commitment of the United States, and the appointment of Dr Henderson and his involvement with, influence over, and

subsequent leadership of the programme – arguably contributed to re-casting the senior WHO leadership's views towards smallpox eradication.

Indeed, by 1966 sufficient momentum had built to ensure the WHO would escalate its commitment to the eradication of smallpox, even if it was to do so without much enthusiasm. Although several senior WHO staff, including the director-general, continued to have profound reservations about the feasibility of eradicating the disease (Fenner et al. 1988), bowing to pressure from WHO member states (and possibly to pressure exerted from within the IO from the Smallpox Eradication Unit) the director-general arranged for a detailed report to be produced outlining how the programme could be advanced. In May 1966 this report was presented to the 19th WHA where it was then approved, and preparations were immediately undertaken for the launch of a second, intensified phase of the programme the following year.

The Intensified Smallpox Eradication Programme (ISEP) commenced on 1 January 1967 with the aim of achieving its objective of complete eradication within a decade. The strategy of the programme was essentially two-fold: firstly, to commence mass-vaccination programmes in all countries where smallpox was endemic using high-quality freeze-dried vaccines; and secondly, to develop and maintain an effective surveillance and detection system to identify individual cases and contain larger outbreaks. In light of the increasingly evident failure of the MEP, and to the WHO bureaucracy's credit, three principles were also recognized to be particularly important in guiding the ISEP's implementation. The first of these was that if complete eradication was to be achieved, all countries needed to participate in the programme. Secondly, the WHO decided that considerable flexibility would be afforded to individual national campaigns in order that they may adapt to local social, cultural, and practical conditions. Thirdly, based on its experiences of resistance to DDT, the WHO agreed that ongoing research would be required to discover new innovative methods for achieving eradication.

In fact, there is clear evidence to support the observation that by the time the intensified phase of the SEP commenced the WHO's bureaucracy had 'learned' a number of important lessons from the failures of the MEP and several other disease eradication campaigns. In one internal document outlining the new SEP strategy that was to be followed, for instance, it was openly acknowledged that '[t]he particular lesson learned has been that it is preferable for the general health services to be involved from the start rather than to wait for years (as in the case of earlier yaws control and BCG vaccination programmes) before

integration is attempted' (WHO 1966d, p. 1, emphasis original). Likewise, in an acknowledgement of the WHO's past inflexibility in eradication programmes, Dr Raska himself noted in a 1966 speech presented to the IX International Congress for Microbiology:

It is also impossible to use for the whole world one too simplified recommendation about vaccination coverage. Logistics in planning, implementation, surveillance and continuous assessment of the programme and necessary flexibility to react in a proper epidemiological way in any unexpected situation should correspond to the different ecological and socio-economic conditions in a given country or groups of countries. (WHO 1966e, p. 5)

In addition to this acknowledgement, the WHO took a much more proactive approach to the technical assistance it offered. Key to this capability was the Smallpox Eradication Unit, which, as Henderson (1987b, p. 543) notes, 'took an active operational role rather than serving in the more common advisory technical capacity. Being in frequent contact with national and WHO programme staff, the unit could anticipate problems, evaluate requests and respond quickly'. The benefits of this new strategy were manifest, as Henderson observes:

The smallpox eradication unit in WHO headquarters established a central point of contact for those outside the programme, whether scientists, potential donors, candidates to join the staff, or the media. Because the unit kept abreast of and widely disseminated the current technical information on smallpox, there was regular communication between the professional staff and the scientific and public health communities. This facilitated the rapid translation into practice of new developments. (*ibid.*, p. 541)

It is therefore not surprising that Fenner and colleagues (1988, p. 380) have correspondingly argued, with reference to the MEP, that the 'successes and failures of its policies provided guidance in formulating [the] smallpox eradication strategy'; and go on to make the case that the intensified phase of the SEP differed from the MEP in three notable ways. Firstly, the WHO only sought to provide generic principles for how countries could pursue smallpox eradication, avoiding the highly prescriptive format it had adopted throughout the MEP. This allowed countries to amend their respective eradication campaigns to meet local conditions and requirements. In addition, the reporting and



surveillance system was introduced much earlier into each campaign's operational phase, allowing member states to use epidemic intelligence to respond rapidly to new outbreaks before the attack phase of the their campaign was completed. Small outbreaks were therefore often able to be prevented from transforming into larger outbreaks or epidemics. Finally, in direct contrast to the MEP that assumed one strategy was sufficient to achieve eradication, the ISEP also promoted the idea that research and new methods of achieving eradication should be actively pursued. The IO's adoption of these three principles thus represented a significant leap in the WHO's governance methodology, and in the years to follow, they began to manifest in a number of very beneficial ways.

In 1967, for example, the WHO produced a manual to ensure SEP personnel possessed sufficient awareness of the programme's overall policies and procedures. Yet in stark contrast to the MEP, where health authorities were expected to implement the organization's policies wholesale and without deviation, SEP staff were actually encouraged to be innovative. It was explicitly acknowledged, for instance, in the handbook's foreword:

that no manual could provide a satisfactory single blue-print which could be universally applicable, considering the many smallpox endemic countries and the vast differences in present health structures, personnel and policies, population characteristics and attitudes, geography and climate. (WHO 1967b, p. 1)

Moreover, although no future versions of the WHO manual were ever actually produced, the 1967 version was purposefully distributed in 'draft' form because the organization's bureaucracy had developed the view that '[a] Manual such as this must continually evolve as the global programme progresses and must constantly be subjected to query and criticism' (ibid.). This signalled a distinct change in the organization's attitude and overall approach to disease eradication projects, with the WHO's bureaucracy functioning more as a policy *adviser*, allowing national health authorities to deviate from the organization's recommendations without fear of financial reprisals accompanying their decision.

In fact, the only element that the WHO did maintain as essential to every national eradication campaign was the need to conduct comprehensive disease surveillance. Even in this though, the WHO bureaucracy approached the issue in a qualitatively different manner compared to its actions throughout the MEP. Firstly, whereas the organization had

emphasized the importance of surveillance throughout the MEP, from 1967 onwards the WHO advocated that disease surveillance was 'the single most important component of the present global eradication effort' (WHO 1968b, p. 2). Evidencing the considerable weight the IO attached to this activity the WHO then arranged, upon request, for mobile surveillance teams to conduct on-site visits to local eradication units in each country. This in turn had a noticeable impact upon how the activity was perceived more generally. As Henderson (1977, p. 89) has observed, '[t]he fact that someone was actively interested in receiving reports and, moreover, took action on the basis of such reports was a new and unique experience for local health staff in many countries'. Correspondingly, a new ethos emerged, one that permeated the entire global effort as Henderson again later noted:

the primary goal of the programme was 0 cases of smallpox and not X millions of vaccinations. Each case which occurred thus implied a weakness or failure in the programme. Knowledge of how and where such failures occurred permitted continuing modification in the programme so as to permit the optimal deployment of resources where they could be most effective. (ibid., p. 87)

The WHO's revised disease eradication tactics extended beyond disease surveillance into the broader operational context though as well. For instance, in the opening months of 1973 a number of epidemics broke out in India, Bangladesh, and Pakistan, the scale of which had not been observed since the commencement of the programme in 1959. National authorities aided by WHO specialists responded rapidly, instigating a variety of containment measures to suppress the epidemics. Nevertheless, it was determined that to prevent further outbreaks from emerging, closer and more prompt detection of index cases was required. The national authorities thus amended their respective campaign strategies to include door-to-door searches engaging volunteers, community groups, and health workers alike, and offering substantial monetary rewards (derived from WHO-administered funds) when cases were reported.<sup>4</sup> This combination of measures proved to be very effective in detecting new cases of smallpox before they developed into major outbreaks, and transmission was ultimately halted in these countries between 1974 and 1975.

Of course, on the converse side, not every decision taken by the WHO proved beneficial. One example that was shown to be particularly obstructive was the determination by the director-general to prevent

any re-allocation of regional SEP funds. This verdict prevented funds being moved from regional areas that had already eradicated smallpox to other regions that had yet to do so. Consequently, while the director-general's decision was made on the basis of political expediency,<sup>5</sup> the implication was that funds that could have been made available to assist countries achieve eradication were not. Another related instance emerged from the strict accounting requirements in the dispensing and allocation of funds at the national level. Although this was later able to be resolved by the WHO taking an innovative approach and establishing 'impress accounts' for staff, strict accounting practices at the commencement of the programme were observed to negatively impact upon a variety of operational issues such as travel arrangements of field staff and petrol and maintenance allowances for SEP-dedicated vehicles (Henderson 1987b, pp. 543–544).

Nevertheless, despite several of these decision-making mishaps, it can be discerned that the governance approach adopted by the WHO bureaucracy throughout the ISEP was substantially different from the methodology it had employed in the context of the MEP. Moreover, this different style of governance influenced the roles that the WHO was prepared and able to effect. For example, throughout the ISEP the WHO functioned more as a policy adviser rather than prescriber: member states were free to choose whether or not they would adhere by the WHO's policies, and were able to make their decision without any fear that the financial support for their respective national campaigns would be withdrawn as a result of that decision. While the IO continued to exercise its normative power to coerce national health authorities into following the WHO's policies wherever it could, the organization was unable and – more significantly – unwilling to compel member states to do so.

The WHO bureaucracy was observed to approach its epidemic intelligence activities very differently as well. For instance, in contrast to the MEP, the WHO encouraged member states to undertake disease surveillance much earlier and report more regularly. This data was then used by the organization to assist member states and, wherever possible, to respond to local outbreaks while simultaneously informing the development of the global SEP policy. The intelligence the WHO received also enabled the bureaucracy to promote the need for new innovative research, as trials were reported and evaluated more efficiently. The WHO thus functioned more as a coordinator of the epidemic intelligence it received, using the information to guide and promote new developments and progress with the overall success of the programme, rather than merely consolidating the information as it had done

throughout the MEP. Moreover, although occasionally the IO's detached oversight was observed to result in minor difficulties emerging between WHO personnel and national health authorities (particularly when local or government health officials were involved in attempting to conceal smallpox outbreaks),<sup>6</sup> generally the atmosphere was one of collegiality, cooperation, and equality – an environment that was qualitatively unlike the MEP.

Equally, the WHO's management of the SEP was defined by an absence of at least one role that it had performed throughout the MEP: that of government assessor. In large part, this was accomplished by the fact that funding and technical assistance was not linked to a requirement for countries to adhere to WHO policies. Rather, from the very start of the global campaign the organization actively sought to distance itself by insisting that each member state was answerable for the expenses, administration, and execution of its respective operations. Later, once the SEP special account had been established and the intensified phase of the programme began, technical assistance and funding was made available to states upon request and without censure – even, notably, as evidence began to emerge of member states falsifying vaccination records, thereby jeopardizing the success of the entire campaign (Glynn and Glynn 2004, pp. 202–206). The bureaucracy instead sought to promote a collaborative approach to eradication, encouraging the view that even one case of smallpox was a failure of all parties, not just the government of the territory concerned.

Indeed, even from the launch of the first stage of the programme, the WHO approached the entire global campaign to eradicate smallpox very differently – an approach that undoubtedly contributed to the international community achieving its final objective of the Smallpox Target Zero campaign (Henderson 1977, p. 87).<sup>7</sup> Of course, it is now widely accepted that the smallpox virus was a more conducive candidate for eradication than malaria, particularly given that, as Henderson (*ibid.*, p. 86) has noted, 'the clinical and epidemiological characteristics of smallpox were unusually favourable for eradication; a remarkably effective vaccine was available; and, universally, there was greater concern about smallpox than any other communicable disease'. At the same time, however, as evidenced by the discussion above, the flexible governance approach adopted by the WHO throughout the SEP also arguably contributed to the success of the campaign – a campaign that remains to this day widely regarded as one of the WHO's greatest achievements. Testifying to this, it is important to note that at the beginning of the programme some 60 per cent of the world's population lived

in smallpox-endemic countries. Yet by the end of a 10-year, 10-month intensified campaign the IO witnessed the complete eradication of a disease that had persisted in afflicting humanity for over three millennia. Donald Henderson, the intensified programme's director, later commented that much of the SEP's achievements could be attributed to the organization's accommodating management approach (Henderson 1987b), while the former director-general, Dr Haflan Mahler, was quoted as having stated that the SEP was 'a triumph of management, not of medicine' (quoted in Hopkins 1989, p. 125). Although management alone cannot account for the success of the SEP, the WHO did learn several very valuable lessons – lessons that it has continued to apply to future global disease eradication programmes and control efforts, including its Global TB Programme.

## **The WHO and TB**

Alongside malaria, TB was identified by the founders of the WHO as being one amongst a cluster of diseases that required urgent attention by the newly created health agency. Until relatively recently though, the WHO's overall efforts in addressing the TB threat could be characterized by something akin to remote disinterest. As will be discussed below, several factors can arguably account for the development of this state of affairs. While it is important to appreciate that the IO cannot be held entirely to blame for its past neglect of this disease, it is necessary to examine past trends and developments to appreciate the WHO's current involvement and how it came about. This section therefore seeks to provide a brief historical overview of both the WHO's involvement in responding to TB and the constraints that the organization has faced throughout this period.

At the close of WWII, TB epidemics had become a common feature throughout many of the post-conflict regions of the world. It should not be surprising, therefore, that the management of this disease was viewed by the WHO Interim Commission as a matter of considerable importance. Certainly, while discussions pertaining to the control of malaria dominated much of the Interim Commission's initial deliberations, determining the organization's role in responding to the ongoing, widespread, and 'rampant' TB epidemics was identified as an issue that required immediate consideration as early as the Commission's second meeting (WHO 1947c, p. 21). Dr Andre Cavaillon, the director-general of the French Ministry of Health, later summed up the view of most delegates, stating '[t]he problem of tuberculosis was of worldwide

importance, and the future WHO would be judged by its attitude to it' (WHO 1948d, p. 13). Evidently the members of the Interim Commission concurred, as they soon established the WHO Expert Committee on Tuberculosis and instigated the organization's first official engagement with managing TB in January 1948.

It was in this regard that the IO's first practical response to the resurgence of post-war TB was to initiate a joint project with UNICEF, focusing particularly on preventing the disease's further dissemination throughout Europe. The central strategy of the campaign built on the concurrent work being undertaken by the Danish Red Cross in Poland, which focused on vaccinating children with the Bacille Calmette-Guérin (BCG) vaccine. Supplementing this strategy, the WHO also initiated a series of surveys or disease surveillance activities to assist countries in allocating sufficient personnel and resources to deal with new TB cases. Yet while the campaign lasted some three and a half years and vaccinated some 18 million children throughout 23 countries, serious questions began to emerge regarding the BCG vaccine and whether it realistically afforded any protection against TB. Consequently, the WHO and the other agencies engaged in anti-TB efforts amended their prevention strategies and, with the emergence of new antibiotic therapies to treat the disease, began to target active cases of TB instead of merely vaccinating populations.

By the early 1950s the emergence and proven efficiency of antibiotic therapies literally revolutionized the way TB was seen as a disease. New trials of combination therapies (conducted mostly in developed countries) were soon demonstrating that TB sufferers could be successfully treated in outpatient clinics and even in their own homes. As a result, within the space of a decade the sanatoriums that had persisted as the dominant method of treating TB patients were being closed down in the majority of industrialized countries. WHO-supported national anti-TB campaigns began to flourish. Yet even as TB infections became increasingly rare throughout Europe and North America, in the developing world infections continued unabated, largely due to the fact that the costs associated with combination chemotherapy treatment were prohibitive. As the WHO director-general recorded in 1952 in a rather remarkable admission:

Experience of the tuberculosis projects during the year confirmed the belief that many of the control methods and techniques used in the more developed countries cannot be successfully transplanted to other parts of the world. WHO's objective in the control of

tuberculosis must be to assist each country to find the method most suited to its own particular conditions, to demonstrate these methods and to train its national personnel accordingly. (Quoted in Calder 1958, p. 23)

Thus, even though the WHO Expert Committee on Tuberculosis later declared in 1960 that the disease 'should receive priority and emphasis both by WHO and by governments' and that it was 'generally conceded to be the most important specific communicable disease in the world as a whole' (WHO 1960d, p. 4), international efforts to control TB effectively stalled as a number of the more wealthy donors – namely the industrialized countries – lost interest.

By the late 1970s TB was no longer viewed as a significant public health issue by the majority of Western countries. While drug-resistant cases of TB had been infrequently observed to emerge, the array of effective treatment options had also been intermittently expanded with the creation of new antibiotics. Throughout the industrialized world, eradicating TB therefore simply began to be perceived as a matter of ensuring adequate supplies of drugs – something that the majority of Western countries had no difficulty in securing. Correspondingly, with the added realization of the failure of the MEP and the 1970s economic crisis prompting substantial re-structuring of healthcare more generally (Chorev 2012), financial contributions for WHO-supported national anti-TB campaigns began to dissipate and interest in TB as a public health issue waned.

The emergence of the HIV in the 1980s and multi-drug-resistant tuberculosis (MDRTB) in the 1990s ultimately revealed, however, just how disastrous the policy of neglecting TB programmes and developing new treatments would become. Indeed new strains of TB, comingling with HIV and/or arising from individuals' non-compliance with anti-TB medications, soon presented a variety of new challenges for the medical establishment as conventional treatments were shown to be ineffective. As a result, by the early 1990s TB had once again begun to spread extensively throughout many Western developed countries. Meanwhile, the WHO's policies had remained unchanged for more than two decades and, disturbingly, the organization's capacity to respond to the resurgence was at an all-time low due to the reality that the control programmes previously initiated in the 1960s and 1970s had been gradually and systematically scaled back through lack of financial support (Raviglione and Pio 2002). In fact, by the time TB was re-appearing as a concern amongst Western interests again, the IO's contingent of

TB-dedicated personnel had diminished to just two staff members (Cegielski et al. 2002). Suddenly unacceptable to several of the more influential member states (and especially the developed countries whose populations were now under renewed threat), the issue of controlling TB was once again granted renewed status within the organization and a new initiative was launched to address the recently re-discovered global threat.

In 1991, in recognition of the danger that TB presented to the entire international community, the 44th WHA announced its intention to increase anti-TB efforts and proclaimed that every national TB programme should pursue two central objectives (see resolution WHA44.8 in WHO 1993a). Firstly, the WHA decreed that every country should aim to detect at least 70 per cent of all smear-positive or active TB cases. Secondly, it declared that every national programme should allocate sufficient resources to successfully treat 85 per cent of all cases detected. Highlighting the renewed importance the international community attached to the control of TB, every member state was also encouraged to achieve these objectives by the year 2000, and the WHO was correspondingly expected to assist countries in this endeavour. As noted above, however, the organization's capacity was noticeably constrained in this regard. The extent of the WHO's assistance at this time was therefore limited to supporting national campaigns through the provision of training materials and guidelines while also seeking to coordinate new international research in such areas as discovering new case detection techniques and treatment options.

By 1993, in response to the renewed interest by developed countries and especially the United States, the WHO's director-general prepared a report on the global situation and presented it to the 46th WHA. The statistics detailed in the report were alarming: one third of the world's population was believed to be infected with TB; eight million new cases were thought to emerge every year; some three million deaths per year were estimated to be attributable to TB; and 95 per cent of all of these cases occurred in the developing world. Noting that TB was 'thus a major global health problem', the director-general stated:

This tragic situation continues even though a strategy exists to control tuberculosis and the tools for its implementation, though not yet perfect, are available. Past neglect by governments in all regions, misunderstanding of the methods and potential for disease control and a veering of scientific and research interests away from infectious diseases that are no longer important in the industrialized world



and from the health problems of poor developing societies where tuberculosis remains rife, explain but cannot excuse this situation. (WHO 1993b, p. 148)

To add weight to the report and in an attempt to engender a greater allocation of resources to tackle the disease, the WHO had announced just one month earlier the resurgence of TB to be a 'global emergency' (WHO 1994). Unfortunately though, even with a state of emergency having been declared, the WHO's attempts to embarrass the international community (and particularly the more wealthy developed states) into committing more resources failed, and progress in tackling the disease remained slow.

For example, one of the key strategies endorsed by the 44th WHA that then began to be widely promoted by the WHO's bureaucracy was the Directly Observed Treatment, Short-course (DOTS). Originally derived from anti-TB work undertaken in India in the 1950s, the DOTS strategy has since emerged to become *the* central strategy of the international community's TB control campaign. At its most basic, DOTS aims to fortify political and financial support; promote case-detection through quality-assured bacteriology; ensure standardized treatment that is supervised and supportive of patients; establish an effective drug supply and management system; and ensure continual monitoring, evaluation, and impact assessments (WHO 2002a, pp. 116–119). Yet while the strategy was endorsed by the WHA in 1991, by 1995 only 35 per cent of the world's governments had actually begun to implement DOTS, and only 18 per cent were able to claim they had made the programme available countrywide (Raviglione et al. 1997, p. 627). Similarly, it was only in 1995 that the WHO was able to obtain sufficient funds to establish a new international surveillance and monitoring project to evaluate the progress made by national TB control programmes in implementing DOTS.

It is equally important to note, however, that the WHO's difficulties in securing additional resources from member states at this time was not without some cause. Indeed, by the mid-1990s a number of influential member states had lost confidence in the organization's ability to manage infectious diseases effectively. This crisis of confidence had arisen in part from the IO's negligence of HIV/AIDS, which had in turn prompted the international community to establish UNAIDS in 1996. In addition, a number of governments had lost faith in the WHO's director-general at the time, Dr Hiroshi Nakajima, who had become embroiled in accusations of corruption and nepotism. Subsequently, throughout the 1990s a variety of intergovernmental and non-governmental organizations,

institutions, and agencies had begun to directly challenge the WHO's normative leadership role and its technical efforts in international health work; and the crisis of confidence exacerbated the organization's existing economic and technical constraints.

In an attempt to focus global attention on the TB 'emergency', the WHO in collaboration with several other partner organizations launched the Stop TB Initiative in March 1998. By working together with a wide variety of interested parties that included governments, non-governmental organizations (NGOs), and private sector organizations, the Initiative sought to generate greater awareness about the TB emergency and thereby trigger greater political commitment and resources. In effect, the Initiative's purpose was thus to ensure not only the more effective coordination of existing resources, but also the mobilization of more resources to address the TB emergency in developed and developing countries. The culmination of the Initiative's work in this area was the Ministerial Conference on Tuberculosis and Sustainable Development held in March 2000 in Amsterdam, The Netherlands, where participating member states gave several new assurances and set a number of new goals to confront the disease. Hailed as 'a defining moment in the restructuring of global efforts to control TB' (Riccardi et al. 2009, p. 608), the Amsterdam conference also proposed the creation of a new global partnership to eliminate TB and the further expansion of the DOTS strategy. Momentum correspondingly began to build; and the Ministerial Conference was then followed by a series of prominent intergovernmental ministerial meetings held between 2000 and 2001. Recognizing that the original objective of the year 2000 was unattainable, the international community subsequently developed several new targets that aimed to reduce the global burden of TB by the year 2015. The primary international vehicle that was purpose-built to advance the international community's efforts in this endeavour is the Stop TB Partnership.

The Stop TB Partnership was created in October 2001 with the primary objective of eliminating TB as a public health threat. Currently comprising approximately 1,000 agencies, institutions, foundations, governments, organizations, and individuals, the Partnership aims to bring together interested parties based on their capacity and willingness to contribute to the goal of halving TB prevalence and fatality rates worldwide by 2015, using 1990 figures as a baseline (Stop TB Partnership 2006). To achieve this, the Partnership established a number of working groups to provide direction and guidance in areas such as expanding the DOTS strategy; developing new diagnostic tools to detect TB cases; advancing research to develop new TB drugs and vaccines; ensuring that

there are sufficient mechanisms in place to tackle MDRTB and TB/HIV coinfection issues; and general advocacy, communications, and social mobilization. It is important to note, however, that while the Partnership is categorized as an independent entity, the WHO forms an integral component of this regime.

For instance, the Partnership's administrative element, the Stop TB Secretariat, is housed within the WHO headquarters in Geneva and forms part of the organization's Stop TB Department. This decision taken by the Partnership was specifically intended 'to facilitate collaboration with the WHO, to benefit from the WHO's robust infrastructure and international legitimacy' (Kumaresan et al. 2004, p. 126). In addition, the secretariat is subject to 'the rules and regulations of WHO for its administrative, financial and human resources management' except, that is, where alterations are deemed necessary to meet the specific needs of the Stop TB Partnership (Stop TB Partnership 2004, p. 14).

Further, the WHO remains responsible for coordinating the development of all global strategy and policy in relation to TB control – strategies and policies that the Stop TB Partnership then executes. Chief among these has been the WHO's work in relation to DOTS. For the past decade and a half the IO has been at the forefront of promoting the implementation of the DOTS strategy throughout high-burden, TB-endemic countries. In more recent years the DOTS strategy has had to undergo revision in order to ensure that it is responsive to the growing challenges of MDRTB and TB/HIV, and the WHO has been responsible for developing new initiatives such as the DOTS Plus programme to tackle these issues. Alongside this activity, the organization is responsible for coordinating the Partnership's working group on expanding the DOTS strategy and overseeing the Global DOTS Expansion Plan (GDEP) through which the WHO has been actively engaged in promoting the creation of coalitions between national health authorities, and local, regional, and international partners to address the needs of individual countries. Understandably, the WHO has therefore played *the* leading role in setting the international community's TB-control targets; but it has functioned as a coordinating agency, issuing recommendations and guidance documents that member states are encouraged (but not obliged) to implement.

It is also arguable that in this regard the Stop TB Partnership has adopted the same ethos that the WHO displayed following the failure of the MEP. The Partnership has explicitly stated, for instance:

Effective TB control cannot be imposed from above. It is a fundamental premise of the *Global Plan to Stop TB* that national governments and

local communities take responsibility for planning and implementing their TB-prevention and treatment programmes. (Stop TB Partnership 2001, p. 15, emphasis original)

Although the Stop TB Secretariat thus coordinates and supports the Partnership's approximately 1,000 members engaged in TB control programmes – in effect creating an epistemic community of like-minded individuals committed to a common cause – individual governments remain accountable for their own campaign's execution and ongoing maintenance. The Partnership's policy thereby mirrors and reinforces the WHO's now standard position that the IO will coordinate international efforts while simultaneously seeking to deflect responsibility for them.

Likewise, the WHO has remained the central actor involved in collating and disseminating TB-related epidemic intelligence. Although this is a function that the organization has performed since its foundation, particularly since the mid-1990s the organization has been heavily involved in the collection and analysis of worldwide TB trends, producing a variety of reports and information documents for international dissemination. In more recent years, this has been augmented by the WHO's development of an interactive global TB database that permits interested parties the opportunity to examine the latest data on prevalence rates and expected fatalities, including country-specific profiles and high-risk areas. The WHO has been able to retain this central role through its close links with member states and the comprehensive network of WHO-affiliated surveillance laboratories and treatment centres. The Stop TB Partnership is thereby reliant upon the data obtained and processed by the organization to inform its own policy choices. Correspondingly, the WHO exists as *the* international community's recognized authority in TB-related epidemic intelligence.

It can be observed, therefore, that the WHO's relationship with the Stop TB Partnership is interdependent, complex, and multi-dimensional. At the same time, however, both entities remain ostensibly independent. For while the IO is expected to provide the Partnership with general guidance and may recommend that it adopt certain policies and procedures, it is the Partnership's Coordinating Board – which lists the WHO as merely one member amongst 34 other partners, including governments, private institutions, organizations, foundations, and individuals – that makes the final determination. Similarly, while the Stop TB Secretariat continues to be housed within the WHO and is answerable to the IO's director-general, the secretariat is responsible for

coordinating general administration, finance, communication, and advocacy. The secretariat also independently manages the Global TB Drug Facility (GDF) that provides TB drugs on a short-term basis to countries. The GDF thereby facilitates the further expansion of the DOTS strategy – one of the tasks that falls under the jurisdiction of the WHO. It is in this regard that the Global Partnership's governance model is considered to be 'successfully balanced' as it 'has been carefully calibrated to ensure representation of the diverse constituencies' while recognizing 'the need for consensus with the need for decisive rapid action' (Kumaresan et al. 2004, p. 126).

This arrangement between the Stop TB Partnership and the WHO is therefore particularly unusual when compared to the IO's past efforts at eradicating infectious disease threats. For instance, through its involvement with the Partnership the WHO is only currently engaged in an attempt to eliminate TB as a public health threat. While this objective incorporates the ideal of eradication, it simultaneously retreats from firmly committing to the principle. This is particularly significant when considering a second factor, namely that the WHO has essentially delegated its disease eradication responsibilities to a third, independent party. For while the organization has, and will likely continue to maintain, a prominent role in the overall global campaign, equally, the WHO is technically no longer directly responsible for ensuring that TB is eradicated. Notably, however, this is in marked contrast to the IO's obligations as required by its constitution. Given these factors and the remarkable dissimilarities between the WHO's efforts in relation to TB and its former disease eradication campaigns such as the MEP and SEP, it is reasonable to ask: Can the WHO be considered to have developed a classical approach to disease eradication?

### **The classical approach examined**

Even from the brief overview provided above, it is reasonable to conclude that the organization's bureaucracy has developed a classical approach to managing infectious diseases. This is principally because while some differences may be discernible in relation to the technical responses of each campaign – for instance, the level and extent of technical assistance provided, the nature of the policy advice supplied, and the technical measures adopted depending on how the disease is transmitted (i.e. vector-borne, air-borne, or transmitted by bodily fluids) – a clear pattern has nevertheless emerged in the aftermath of the MEP in terms of the governance methodology employed by the WHO.

This methodology is categorized by a number of features. Most notably, following the unqualified failure of the MEP the WHO has consistently eschewed and shirked opportunities to act as the international community's directing authority in international health matters. Instead, as the cases above have illustrated, since the MEP the organization's bureaucracy has unswervingly sought to function more as a coordinating agency or facilitator, encouraging member states to take ownership and responsibility for their own respective disease eradication campaigns. While in some ways this new approach was consistent with the authority envisaged by the WHO's founders, two factors in particular arguably contributed to the bureaucracy amending the IO's governance style: the collapse of the MEP and member states' subsequent decision to rein in the organization through their control mechanisms.

It was immediately apparent in 1958, for example, that the WHO's bureaucracy was disinclined to launch yet another global eradication campaign – the SEP. Although several political, technical, and logistical considerations may have assisted in explaining this initial reluctance, by the mid- to late 1960s the bureaucracy's concern appears to have shifted to the possibility that the smallpox programme would prove to be yet another momentous failure like the MEP that would, in turn, damage its reputation as an effective and efficient IO. The programme's economic constraints, which persisted well into the final stages of the campaign and were driven by donors' recent experiences with the failed MEP, also arguably reinforced the WHO's seemingly nonchalant attitude towards the initiative. As a result, however, even as the organization embarked on the intensified phase of the global smallpox campaign, the bureaucracy maintained that while it would assist member states, governments were to be ultimately responsible for their own national eradication campaigns and the policies they chose to implement (such as mandatory vaccinations). Wherever necessary and upon request, the IO would provide technical assistance and financial support to ensure national campaigns were aware of the latest eradication techniques and programme developments. But it was made equally clear to each country that it was responsible for the administration and execution of the campaign in its territory. In part by choice and in part by compulsion, therefore, in fulfilling its health-for-security delegation contract the WHO's bureaucracy embraced its role as a coordinating agency, working to synchronize the international community's efforts to successfully achieve the eradication of smallpox.

In contrast, in the context of the WHO's TB campaign, a firm commitment was originally demonstrated for the IO's bureaucracy to work

towards the eradication of the disease. Yet through a combination of events – including the development of new technologies such as antibiotics, disillusionment with the WHO's past performance, and a global economic crisis – a number of influential member states lost interest in pursuing this goal. The WHO's TB activities were thus left in limbo, and even deliberately downgraded, until such time as Western developed countries were (re)awoken to the threat TB presented. Further, even though the organization's bureaucracy then displayed its willingness to go to extraordinary lengths, conspicuously declaring a global emergency to tackle this disease, member states chose to bypass the IO and create a new international regime to lead the charge: the Stop TB Partnership, which in turn was ultimately overshadowed by the Global Fund to Fight AIDS, TB and Malaria. The WHO thus again functioned largely as a facilitator, operating behind the scenes in developing global policy and providing the means for the Stop TB Partnership to achieve its objective of eliminating TB as a public health threat.

Further, as the above illustrations have testified, even as the WHO bureaucracy progressively sought to give effect to its health-for-security mandate, there were limits to which the IO was prepared (and permitted) to perform. For instance, it is apparent that one of the key functions the WHO has reliably performed since its creation has been the collection and collation of epidemic intelligence. In its first days of operation, though, the organization's bureaucracy largely regurgitated the information it obtained, melding the data into guidelines and procedures that were then to be implemented without deviation – functioning, in effect, as an epidemic intelligence consolidator. However, after the disintegration of the MEP, the organization recognized the unsuitability of such practices and began to use the information it received to evaluate and critically reflect on the policies it was promoting. This marked a distinct change in the IO's *modus operandi*, with the bureaucracy seeking to behave more as an epidemic intelligence coordinator of the data it received, identifying gaps in existing knowledge, promoting new research, and providing, wherever possible, recommendations based on sound evidence.

Following closely behind the organization's transformation in relation to epidemic intelligence, the WHO also began to act more as a policy adviser in the wake of the MEP, as opposed to acting as the international community's policy prescriber. It may be recalled, for example, that the WHO bureaucracy had initially adopted a very prescriptive, authoritarian attitude in relation to the MEP policies it formulated. The collapse of the malaria programme again revealed how ill-advised this

outlook had been; and correspondingly, the bureaucracy began to encourage not only its staff, but also member states and national health authorities to adapt its policies where they were identified to be ineffective. The bureaucracy, in essence, became more flexible in its approach, and while the policies the WHO produced were increasingly based on the latest available evidence, the IO continued to stress their status as recommendations rather than directives. This proved a very timely change for the intensified phase of the SEP, as it permitted member states to adapt their campaign structure and operational activities to address local conditions. Likewise, this change has encouraged member states to revise their TB control strategies where evidence indicates that the former methods are not working.

The third – and arguably the most significant – change was that the WHO bureaucracy has, since the MEP, systematically and unfailingly avoided functioning as a government assessor. Throughout the malaria campaign the WHO bureaucracy was observed to scrutinize member states' compliance with its policies, and where deviations were noted WHO personnel were made available to assist member states remedy them. Further, although the bureaucracy itself was not responsible for donors choosing to withhold funds from those countries not adhering to the organization's policies, by failing to condemn the action the bureaucracy tacitly signalled its endorsement of the practice. Similarly, during the MEP's operation select member states had been excluded from the programme on the basis of technical and political considerations with the full knowledge and consent of the WHO's leadership.

In the context of both the global campaign to eradicate smallpox and the Stop TB programme though, the WHO bureaucracy has sought, as much as possible, to avoid repeating these practices. To begin with, the organization has gone to (and continues to go to) considerable lengths to ensure that no country is excluded from its global campaigns, whether the aim is simply control (i.e. TB) or the more substantial goal of eradication (smallpox, polio, and similar diseases). In fact, where countries have been noted to distance themselves from engaging in such campaigns, the WHO's bureaucracy has sought to use every available means at its disposal to encourage their participation. At the same time, the organization has returned to the system envisaged by the WHO's founders of only assisting member states upon request, signifying its respect for member states' sovereignty and the principle of non-interference. Thus even though member states regularly diverged from the WHO's procedures throughout the SEP, in contrast to the malaria campaign this divergence was actively encouraged by the IO's bureaucracy – a feature that was also promoted in eliminating TB.



Yet another feature of the WHO's classical approach to managing infectious diseases is that the IO's bureaucracy has painstakingly sought to avoid even the perception that it criticizes its member states. In part, this practice has developed from a recognition of the innate importance of the organization's own reputation as an efficient and effective IO. The WHO bureaucracy has, perhaps understandably, therefore become extremely protective of its status and has habitually sought to avoid any situation that may reflect poorly on its performance and/or attract criticism. Equally, however, the bureaucracy has stringently avoided being perceived as criticizing its member states due to the potential (unwelcome) repercussions that may result from such an incident – for example, the imposition of further politico-legal, economic, technical, or socio-legal constraints. Said another way, member states have successfully managed to make it clear to the WHO bureaucracy that there are significant limitations on the IO's role, authority, and autonomy. In order to achieve its primary mission and continue to remain relevant to the wider international community, the organization must cooperate with member states. Subsequently the WHO bureaucracy is reluctant to engage in any activity, or be perceived to be engaging in any activity, that may jeopardize its relationship with its principals.

Finally, throughout each of the WHO's global disease eradication campaigns the IO has rarely functioned as the international community's lead technical agency. Instead the organization has preferred to allow its member states to initiate any requests for the IO to intervene, often waiting for the WHA to pass resolutions that effectively compel the bureaucracy to act. It is likely this trend has arisen in part due to an acknowledgement by the bureaucracy of the IO's limited autonomy and an awareness of member states' mechanisms of control – most notably the economic constraints. At the same time, however, and as attested to by the IO's negligence of the HIV/AIDS threat, the WHO has also occasionally failed to assume the lead in combating infectious diseases even though member states have demanded that it do so. Whether or not these instances may be classified as examples of the WHO shirking its delegation contract, the result has been that the organization has seldom acted as the world's lead agency as originally envisaged.

## **Conclusion**

Part I of this book has highlighted that the WHO was established with the specific purpose of ensuring the highest possible level of health for all peoples. Intrinsic to that purpose is the eradication of infectious diseases, and the organization was correspondingly invested with a

considerable degree of authority and autonomy when it was first created to execute that duty. In effect, this formed an embedded disease eradication delegation contract between the IO and its member states that outlines the broad parameters of association and interaction, while simultaneously signalling the obligation and sense of importance the WHO is to attribute to this function. Indeed, member states considered the WHO's health-for-security role via eradicating infectious diseases to be so significant that they were willing to permit the suspension of the IO's usual control mechanisms to deal with epidemics and other disease-related emergencies. The organization's role in working towards the eradication of all infectious diseases may thus be considered the WHO's foremost function amongst all of its delegated duties.

At the same time, member states were concerned that the newly created IO might exceed the parameters of its authority and as such, inserted several mechanisms of control into the organization's institutional design. These mechanisms, which fall under the broad taxonomy of politico-legal, economic, technical, and socio-legal measures, have effectively served to constrain the WHO bureaucracy from expanding its sphere of operation and competence, except where member states have explicitly permitted otherwise. While the WHO was therefore clearly intended to act as the directing and coordinating authority in the field of international health, and exist as the highest authority in that field, it is apparent that member states never anticipated that the IO's role, authority, and autonomy would be unlimited.

The WHO's duty to prevent, control, and eradicate infectious diseases was put to the test very early on in the organization's history. Unfortunately, the IO's first attempt at eradicating an infectious disease – malaria – proved a notable failure. But the WHO secretariat arguably learnt from this experience, applying several lessons learned to the smallpox eradication campaign and the attempts to control and eliminate TB. Through these experiences the WHO subsequently developed what may be considered a classical approach to managing infectious diseases. This approach is characterized by the organization's reluctance to act as a directing authority as well as two specific operational roles: epidemic intelligence coordinator and policy adviser. In the wake of the MEP's failure, the WHO bureaucracy has also gone to painstaking lengths to avoid even the perception that it is critical of its member states, fearful of the possible ramifications that engaging in such actions may bring. Finally, in contrast to its actions during the MEP, the WHO has also sought to engage every country in disease eradication and/or disease control campaigns so that it may function as an efficient and effective coordinating agency.