Policy and practice

Global eradication of polio: the case for "finishing the job"

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Abstract While seven years have passed since 2000, the target set for the eradication of polio, success remains elusive. In 2006, despite coordinated international efforts, there was no major breakthrough in containing the polio virus, which persists in a few pockets in the four countries in which it is endemic. The polio eradication programme faces new hurdles such as importation, reemergence and failure of political and community mobilization. The decreasing morale of health workers and volunteers, doubts about the efficacy of oral polio vaccine and ever-increasing programme costs and funding challenges are other issues to be addressed.

This paper describes the ongoing conventional strategy adopted for polio eradication, then analyses existing challenges and some possible solutions. The author suggests that major modifications and additions to the ongoing conventional strategy are required in order to create a multi-pronged, area-specific strategy that can finish the job of polio eradication. This should include an area-specific approach, community dialogue, enhanced political advocacy and compulsory vaccination, as well as the use of inactivated polio vaccine in endemic countries even before the transmission of wild polio virus has been halted. This appears to be the best way to achieve eradication at the earliest opportunity.

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Une traduction en français de ce résumé figure à la fin de l'article. Al final del artículo se facilita una traducción al español. التجمة العربية لهذه الخلاصة في نهاية النص الكامل لهذه المقالة.

Introduction

The reduction of the number of children affected by polio from 1000 per day¹ in 1988 to about 5 per day² in 2006 is a no mean feat by any standard. However, the target established by the World Health Assembly³ called for the eradication of polio by 2000, seven years ago. Globally, more than 10 million volunteers 4 have administered about 10 billion doses of polio vaccine on hundreds of national and subnational immunization days at a cost of US\$ 4.5 billion^{5,6} since the World Health Assembly resolution of 1988.³ The initial success of the polio eradication programme was remarkable and many countries and continents were freed from infection and disease; however, the scenario changed between 2002 and 2005, when resurgence and importation occurred in 21 countries.⁷ Since this time, success has been elusive and even in 2007 some pockets of wild polio virus (e.g. in Moradabad, India, and in Kano, Nigeria) give eradication experts cause for concern.8

The explanation for the outbreaks of polio in 2006 is given by the "four-year

cycle"; outbreaks of polio also occurred in 1998 and 2002. It is now clear that polio will not be eradicated in 2007.8 The number of cases reported globally in 2006 was higher than in any of the previous six years. In 2006, the number of cases reported in India was higher than in any of the previous four years, while the reported number of cases in Afghanistan and Nigeria was the highest in the previous six years. The situation calls for immediate action.

The author searched and reviewed the full text of the available published literature on polio eradication via PubMed and examined Internet sources and the web sites of major international health agencies. In an effort to understand the current strategy for polio eradication and to identify the hurdles involved, the author suggests new approaches based upon current experiences to eradicate polio as soon as possible.

The conventional strategy

The conventional four-pronged strategy has succeeded in eradicating polio from a large part of the world. This strategy involves maintaining high coverage of vaccination with at least three doses of live oral polio vaccine (OPV), providing supplemental rounds of vaccination, establishing an effective mechanism for the surveillance of acute flaccid paralysis (AFP), and house-to-house OPV "mopup" campaigns carried out at the final stage in a limited geographical region.

High-level political advocacy and mass mobilization have been used to optimum benefit in this programme. Simple management tools like nonmonetary incentives were used to a large extent. Polio eradication has been a dynamic programme in which strategies have been frequently adapted and modified to various extents. Supplementary immunization activities, house-to-house activities and enhanced surveillance were later additions to the programme. 10 The administration of monovalent vaccine (which has enhanced efficacy, increasing the chances of seroconversion in immunized children by almost three times), an increased number of supplementary rounds of vaccination and transit strategies (vaccination at transit points, such as railway platforms and national borders)

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became part of the programme as late as $2005.^{11}$

The number of countries in which polio is endemic has decreased from 125 countries in 1988 to four countries (Afghanistan, India, Nigeria and Pakistan) in three WHO regions at the present time. Nine other countries reported importation of polio virus in 2006.2 There is only one pocket - Moradabad district in Uttar Pradesh, India - that is continuously exporting wild polio virus to other countries. There is a funding deficit of US\$ 575 million to meet for 2007-2008.6 It is clear that sooner or later the world will be able to eradicate polio, but the current rate of progress is very slow and is impeded by many hurdles. New threats still occasionally emerge that require immediate attention and urgent counteractive measures.

The current challenges

Political advocacy

In the history of public health activities, it is likely that no effort has ever been organized on such a wide scale as that of polio eradication. Political advocacy targeted towards the participation of developing countries has been instrumental in sustaining the programme, involving volunteers and keeping vaccination coverage high. Societal and political factors have always been thought of as determinants of disease eradication.12 The importance of advocacy was highlighted when state authorities in Kano, Nigeria, suspended supplementary immunization activities between April 2003 and July 2004, resulting in a decrease in OPV acceptance in all northern Nigerian states.7 The subsequent importation and re-emergence of polio is still haunting the world. The resumption of supplementary immunization activities there could only be achieved by high-level advocacy by federal authorities, external partners and public health officials from affected states. This example illustrates the fact that the final stage of eradication needs sustained advocacy at the highest political level to maintain the tempo of the programme; any deficit in this area may delay achieving the target.

Social mobilization and community participation

Where community involvement in the eradication programme has been low, OPV coverage has remained low, leading to failure to eradicate polio. For example, in some states in India, people

could not be mobilized to bring their children to the polio vaccination booths on national immunization days,13 while the Nigerian government succumbed to pressure from religious groups to cease supplementary immunization activities (misbeliefs, held by certain religious groups in some parts of India and Nigeria, hold that vaccination with OPV can lead to sterility and death, and that vaccination with OPV is being used as the means to reduce the number of believers in a specific religion). In India and Nigeria, either coverage or turnout on national immunization days was low, allowing circulation of the wild polio virus. Poor community participation and insufficient community ownership are factors that have contributed to the endemicity of wild polio virus in these two countries.¹³ Social mobilization can be considered as important as political mobilization,14 and both need immediate reinforcement.

Volunteers

The role of volunteers in the eradication programme cannot be overlooked. These volunteers know the community, its practices and beliefs, the terrain and the language of the area in which they work, facilitating the job of administering the vaccine with a high coverage. The efforts of hundreds of thousands of people from different walks of life have made many eradication activities successful. Can any health programme afford to recruit this many extra paid personnel? Definitely not.

The recent repeated outbreaks and frequent rounds of vaccination are demoralizing for the volunteers and inevitably lead to programme-related fatigue.¹⁵ If no corrective measure is taken immediately the quality of immunization coverage, and ultimately the eradication programme, may be adversely affected.

Vaccine failure or failure to vaccinate?

Reports of the occurrence of polio among children in India who had been previously vaccinated with more than four doses has raised doubts about the efficacy of OPV.^{13,16,17} It has also been said that herd immunity (whereby vaccination of a part of the population provides protection to non-vaccinated individuals) is not being established with OPV; the age at which polio is acquired is not shifting upwards in some

populations: in India almost two-thirds of cases still occur in children less than two years old.¹³

Country experts speculate that the children affected may not actually have been immunized, although data to confirm this are not available. Indian agencies claim that routine immunization coverage with three doses of OPV (an important part of the strategy) in Uttar Pradesh and Bihar has long been more than 90% and is under close scrutiny.¹³ In contrast, international agencies such as the United Nations Children's find (UNICEF) have reported coverage with three doses of OPV to be as low as 27% in Bihar, 38% in western Uttar Pradesh and 45% in eastern Uttar Pradesh, the Indian states most severely affected by polio.18

Surveys on immunization coverage suggest that the countries in which polio is currently endemic have always had low coverage with the third dose of OPV in routine immunization; in increasing order, the coverage was 39% in Nigeria, 65% in Pakistan, 66% in Afghanistan and 70% in India. Moreover, national variation hides regional variations and considerable "immunity gaps" at subnational levels.11 The coverage on national immunization days is always reported to be more than 90%, but in the present situation this needs close monitoring as it is not logical that a vaccine that can be effective in one region cannot achieve the same efficacy in another. These observations call for an immediate and independent survey to be carried out in these areas to ascertain whether continuing outbreaks of polio can be attributed to vaccine failure or failure to vaccinate. The past and present problems associated with polio vaccine coverage are managerial and not scientific.¹⁹

Threats of importation and re-emergence

When the history of polio eradication is written, the "Nigeria experience" and the importation and re-emergence of wild polio virus in 21 previously poliofree countries will find a prominent place. Between September 2002 and July 2005, type 1 wild polio virus travelled from country to country, causing many outbreaks of polio. The number of cases ranged from 1 in Eritrea to 478 in Yemen. These cases had originated in Nigeria and India. In 13 of 21 countries, there were repeated outbreaks; in 8 of these 13 countries, transmission

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was later stopped. The countries that succeeded in halting the transmission had a median coverage with three doses of OPV of 83%, compared with 52% in the other 13 countries (P = 0.001).⁷ This experience suggests that the debate about ineffectiveness of the OPV is not valid and points towards failure to deliver the vaccine as the reason for continued virus transmission. The response immunization was not initiated within the recommended period of 28 days in 6 of the 20 countries, and this delay prolonged the duration of virus transmission. The lesson from this experience was learned; in May 2006, the World Health Assembly passed resolution 59.1 concerning outbreak response in polio eradication.20

The cost of eradication

Cost–benefit analysis is always performed before embarking on any public health activity, including eradication. The cost of polio eradication has now reached US\$ 4.5 billion, compared with the initial estimate of US\$ 2 billion. 5.6 The programme needs an additional US\$ 575 million for the coming two to three years. 5.6 Any eradication programme should be started with sufficient funds and financial backup from donors, as the long-term challenge of fund-raising may threaten the whole eradication effort, as happened in 1999 and 2003.

New threats

A new threat to the eradication programme emerged in Namibia early in 2006, when 20 cases of polio were reported in people aged 14 to 51 years.⁸ What if by immunizing all children we prevent childhood polio, and cases start to occur in adults? Does the Namibia experience have implications for when and how to stop vaccination with OPV? Is there a need to organize one or two rounds of vaccination with OPV in the adult population before cessation of OPV in order to prevent circulation of polio virus in the adult population?

The persistence of myths about polio, particularly in endemic areas, can result in low participation and poor cooperation. After almost 10 years of running the eradication programme in India, myths about the polio continue to circulate among the general public.^{5,13} The solution may lie in including information on polio and vaccination in textbooks and curricula of school and colleges to generate awareness and

increase people's participation in and ownership of the programme.

What needs to be done immediately?

The area-specific approach and community dialogue

The four-pronged strategy described earlier should be credited with eradicating polio from a large part of the world and causing it to retreat to a few endemic pockets. In the last three to four years, we have seen that these pockets have different problems to be addressed. In Afghanistan and Pakistan, geographically difficult territories must be negotiated by health workers.²¹ In two states in India, myths persist in a community¹⁸ that has become non-receptive to vaccination in recent years, such that successive birth cohorts are not being immunized. In Nigeria, the actions of the government and religious organizations had an unfavourable effect on the eradication programme, undoing gains that had been acquired over years.7 Recently, research has pointed towards the role of poor sanitation and hygiene in the spread of polio virus.²² Although the finding is noteworthy, it remains to be explained why polio can be eradicated in some countries but not others in which sanitary conditions are similar or worse. In these areas in which polio still occurs, the hurdles to be faced are all different, and eradication may not be achieved by the same strategies.

Local and national experts need to identify and act on the problems in each specific area. Instead of a national-level plan, we should prefer district-specific or even subdistrict-specific plans. Each pocket needs to be dealt with individually to stop the transmission of wild polio virus from that area. 15 The area-specific approach plus community dialogue8 now seems to be appropriate. Community dialogue has a proven track record in Nigeria and can also be applied in other settings. The conventional eradication strategy needs to be supplemented according to local needs to make a multipronged, area-specific strategy that may vary in different regions.

Political advocacy

The role of sustained advocacy^{12,14} has been highlighted in this paper. Continuous advocacy to the local and national governments is more important now than ever, as new approaches require

Eradicating polio: "finishing the job" | approval from governments and communities. This may be achieved by

high-level advocacy among the target

groups and communities by experts and international leaders.

Compulsory vaccination and inactivated polio vaccine

When polio importation occurred in Saudi Arabia, a directive required a valid certificate of polio vaccination in order to enter the territory. Administration of OPV to all children aged less than 15 years at the airport was also practiced.²³ This approach could be emulated by other polio-free countries to prevent future importation.

While the above methods are suited to the polio-free countries, countries in which polio is endemic should follow a strategy based on compulsory vaccination.^{24,25} Compulsory vaccination does not mean that all people should be vaccinated with or without consent. There is a provision whereby vaccination can be refused by legal declaration and after education about the possible benefits of immunization. This approach has been used in the United States of America and the United Kingdom, and also for smallpox eradication in the past. The challenge of achieving high coverage could be ensured via extraordinary legislation for compulsory vaccination against polio in endemic regions. This legislation might cease to function once polio is eradicated from that particular region.

The inclusion of inactivated polio vaccine (IPV) in eradication programmes requires immediate consideration. That IPV has an important role in polio eradication is beyond doubt; once polio is eradicated, IPV is the only way of preventing the circulation of re-emerging polio viruses. IPV also provides collective and individual protection until the threat of resurgence of polio completely disappears. These facts call for use of IPV in endemic areas for eradication even before the disappearance of wild polio virus from the community. There, the selected regions may opt for compulsory vaccination with IPV by organizing special rounds. This can be supported by keeping the high OPV coverage in routine immunization. In areas in which polio is endemic, three subnational immunization days could be organized to immunize all children with IPV, irrespective of their previous immunization status. It would be most logical to initiate compulsory immunization with IPV immediately on national immunization days, as coverage with three IPV doses will confer almost 100% immunity.²⁶ Compulsory vaccination with IPV has the potential to eradicate polio earlier than could otherwise be expected.

Live oral vaccine and/or inactivated vaccine?

Even with the eventual interruption of the transmission of wild polio virus, outbreaks of paralytic polio will continue until the routine use of live vaccine is stopped.²⁷ The public health benefits of OPV continue to outweigh the risks at the present time.^{27–29} This situation will reverse once transmission of wild virus is interrupted and it will be very difficult to eradicate polio using only OPV. The administration of the number of doses - sometimes as many as 10 - required to confer the necessary immunity is a challenge,13,22 especially when parents' and health workers' motivation is likely to decrease.

The possible solution may be that countries in which polio is endemic should organize three national immunization days with IPV with strategies like compulsory vaccination, which will give almost 100% protection to the children vaccinated.²⁷ This may be followed by use of IPV in routine immunization programmes to protect all successive birth cohorts. The use of OPV in national and subnational immunization days to cover all the children routinely can be continued. IPV in routine immunization would protect individual children while circulation of wild polio virus will be stopped with high coverage with OPV on national immunization days. This approach is logistically feasible, as it does not require extra trained workforce. The advantages are manifold; first, this will address the current problem of occurrence of polio in previously vaccinated children (as IPV ensures almost 100% protection after two doses). Second, it is easier to vaccinate a child with three doses of IPV than with 10 doses of OPV. However, the cost of IPV, sustained availability of vaccine and need for trained workforce to perform the necessary intramuscular injection are limiting factors 29 in the use of IPV for national campaigns and in routine immunization, and need to be addressed before such decisions are made.

The use of monovalent and trivalent OPV in alternative rounds of national immunization days is a good option; this would prevent sudden outbreaks of type 3 that might spread silently in the community in the absence of vaccine against type 3 and that can arise suddenly, monovalent OPV giving protection against type 1 polio virus only. This method may work as a natural experiment to document the probability of emergence of circulating vaccine-derived paralytic polio (cVDPP) virus type 2 after the vaccine is discontinued,28 although that would be of only theoretical significance as vaccination with OPV has to stop sooner or later when the wild virus has been eradicated.³⁰ If there is no evidence for the occurrence of more than one type of virus in the community, monovalent OPV should be used and continued at this stage.

Strengthening routine immunization and birth dose of OPV

The polio eradication programme has reportedly decreased routine immunization coverage, owing to the heavy workload imposed on health workers also involved in eradication. On the contrary, this opportunity should be used for strengthening routine immunization, as once wild polio virus has been eradicated and the programme is in its final stages, a strong universal immunization system will help other eradication efforts when IPV needs to be given as the part of the routine programme.

Other considerations

Cessation of OPV strategy

The contribution of OPV to eradication is beyond doubt, as is the fact that the long-term global eradication of polio will be impossible without IPV, seeing that use of IPV is the only way to prevent vaccine-derived paralytic polio ^{29,30} in the future. For the well-described reason of reversion potential (reversion of a vaccinal strain to a wild-type virus), the continued routine use of OPV is ultimately incompatible with the eradication of polio.³¹

The recent outbreak of vaccinederived polio in Indonesia¹¹ illustrates the continued risk of emergence of vaccine-derived polio virus in areas with low population immunity. It is important to improve and maintain the highest possible routine vaccination coverage, while all routine uses of OPV should be stopped once wild polio virus is eradicated. In the final stages, the small number of children with compromised immune systems need to be kept in mind, and routine immunization of these children with IPV can be considered a viable approach.

Countries that have been polio-free for at least two to three years may now decide upon a time frame to stop OPV use, using the next few years for massive immunization campaigns to keep immunity high before discontinuation and switching over to IPV. Alternatively, OPV can be discontinued under an IPV "umbrella," that is scaling down the uses of OPV only when IPV coverage has reached a sufficient level to prevent circulation of vaccine-derived virus.³²

Re-emergence in the posteradication era

International migration poses the threat of re-emergence and importation in the post-eradication era. The lesson learned from outbreaks that occur while eradication efforts are ongoing can help should outbreaks occur after wild polio virus has ceased to circulate. Countries need to implement the necessary corrective and preventive measures on an emergency basis in such circumstances, ²⁸ and international experts and agencies need to be prepared for such events.

The current facilities for the production of IPV are limited and might not be able to produce enough IPV when countries are willing to use it in routine immunization. Starting to produce IPV in sufficient quantities should be a priority ²¹ to ensure that IPV is available from early 2008 for all countries that might need it.

Other lessons for the future

Firstly, eradication should always be targeted to a shorter and stipulated time frame, as a long duration leads to fatigue and decreases the performance of the people involved. Eradication programmes should be likened to a military strategy and based on the "hit-and-run" method.

Secondly, eradication should be an internationally coordinated effort and most of the groundwork (including funding support, workforce training, sufficient availability of vaccine, infrastructure planning, facilities for vaccine delivery, political commitment, com-

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munity mobilization and surveillance networks) should be finished before embarking on any such activity. This was not the case with polio eradication, as many countries started programmes in their territory a long time after a large part of the world was polio-free. Had efforts been internationally coordinated and synchronous, the situation could have been different.

Conclusions

The earliest possible time when we can expect zero cases of polio to be reported is the end of 2007; this means that to be sure of polio eradication, the world must continue to use OPV for another three years, until at least 2010. Theoretically, this should be followed by use of IPV and continued surveillance for acute flaccid paralysis for another seven to eight years. This implies that the eradication of polio in the truest sense cannot be achieved before 2017. This era after the polio virus ceases to circulate will be full of threats of outbreaks and uncertainties. However, how could any major health initiative ever be launched if the world fails in or squanders this precious opportunity to eradicate polio? The polio eradication programme has greatly contributed to a better understanding of the biological, socio-political and economic complexities of eradication, which will immensely benefit any future effort against other diseases. The unwanted delay in achieving the target should now be used to benefit future public health efforts. First, once polio has been eradicated the world will have available an army of people who have been trained in public health and eradication matters and who will benefit the international community. Second, a functioning network of laboratories, surveillance systems, and convinced and motivated national governments and managers would be assets for nations, as would improved and more efficient health systems. Third, thousands of volunteers, proud to talk about their contribution to polio eradication, will be there to prepare another generation of volunteers to advocate for similar future efforts. Finally, the financial benefits are

The traditional four-stage strategy has done its work and polio is now restricted to a few pockets. It is time Eradicating polio: "finishing the job"

to make the necessary modifications to the strategy to design a multi-pronged area-specific strategy with which to finish the job. This may require legislation for compulsory vaccination, addressing local needs and use of IPV in routine immunization in endemic countries even before disappearance of wild polio virus. Immediate action is needed to kick the virus out and put polio into the history books.

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Résumé

Eradication de la poliomyélite à l'échelle mondiale : il faut « finir le travail »

Le terme fixé pour l'éradication de la poliomyélite, à savoir l'année 2000, est dépassé depuis sept ans et l'objectif est encore hors de portée. En 2006, malgré les efforts internationaux coordonnés, aucune avancée majeure n'a été enregistrée dans l'endiguement du poliovirus, qui se maintient dans quelques poches d'endémie de quatre pays. Le programme d'éradication de la poliomyélite doit faire face à de nouveaux obstacles : importation et réémergence de la maladie, échec de la mobilisation politique et communautaire. Il faut aussi surmonter le découragement des professionnels et des volontaires dans le domaine sanitaire, les doutes quant à l'efficacité du vaccin antipoliomyélitique oral, l'inflation permanente des coûts programmatiques et les difficultés grandissantes pour financer les interventions.

Le présent article expose la stratégie actuellement appliquée pour éradiquer la polio, puis analyse les problèmes existants et les solutions pour y répondre. Selon l'auteur, il serait nécessaire de modifier et de compléter de façon conséquente cette stratégie pour en établir une nouvelle, intégrant plusieurs volets et s'adaptant spécifiquement aux différentes zones touchées, de manière à pouvoir finaliser l'oeuvre d'éradication. Les modifications et les apports à la stratégie d'éradication pourraient donc comprendre une adaptation à la zone d'intervention, un développement du dialogue avec les communautés, un renforcement des actions de sensibilisation politique, une mise en œuvre plus poussée de la vaccination obligatoire, ainsi que l'utilisation du vaccin antipoliomyélitique inactivé dans les pays d'endémie avant même l'interruption de la transmission du poliovirus sauvage. Ces améliorations constitueraient, d'après l'auteur, le meilleur moyen d'atteindre le plus tôt possible l'éradication.

Resumen

Erradicación mundial de la poliomielitis: argumentos para «acabar el trabajo»

Aunque han transcurrido ya siete años desde 2000, año fijado como meta para erradicar la poliomielitis, el éxito de ese empeño sigue sin concretarse. En 2006, pese a la coordinación de los esfuerzos internacionales, no se registró ningún avance destacable de las actividades de contención del virus poliomielítico, que persiste en unos cuantos focos de los cuatro países en los que es endémico. El programa de erradicación de la poliomielitis afronta

nuevas dificultades, como la importación y la reaparición del virus y el fracaso de la movilización política y comunitaria. La menguante moral de los trabajadores sanitarios y los voluntarios, las dudas sobre la eficacia de la vacuna antipoliomielítica oral y los cada vez mayores costos de los programas y problemas de financiación son otras cuestiones a abordar.

En este artículo se describe la estrategia convencional puesta

en marcha para erradicar la poliomielitis y se analizan los retos existentes y algunas soluciones posibles. El autor sugiere que es necesario introducir importantes modificaciones y nuevos elementos en la actual estrategia convencional a fin de desarrollar una estrategia amplia y propia de esta área para poder acabar el trabajo de erradicación de la poliomielitis. Ello debería incluir un enfoque específico para este problema, diálogo con las

comunidades, mejoras de la sensibilización de la clase política y la vacunación obligatoria, y uso de la vacuna antipoliomielítica inactivada en países endémicos antes incluso de la interrupción de la transmisión del poliovirus salvaje. Este planteamiento es probablemente el más idóneo para lograr la erradicación lo antes posible.

ملخص

استئصال شلل الأطفال من العالم: حالة ((استكمال المهمة))

لاعتمادها لاستئصال شلل الأطفال، ثم تقدم تحليلاً للتحديات الراهنة وبعض العلول الممكنة. ويقترح المؤلف إدخال بعض التعديلات والإضافات الكبيرة الأثر على الاستراتيجية المعهودة، وأن ذلك ضروري لخلق استراتيجية متعددة الأبعاد وخاصة بكل مجال من المجالات على حدة، ويمكنها أن تستكمل مهمة استئصال شلل الأطفال. وينبغي أن تشتمل هذه الاستراتيجية على أسلوب خاص بكل مجال من المجالات على حدة، والتحاور مع المجتمعات، وتعزيز الحملات الدعائية بين أصحاب القرار السياسي، والتطعيم (التلقيح) الإجباري إلى جانب استخدام اللقاح المعطّل لفيروس شلل الأطفال في البلدان التي يتوطن فيها المرض، وذلك حتى قبل إيقاف سراية الفيروس البري؛ فذلك قد يكون أفضل الطرق لتحقيق استئصال شلل الأطفال في أقرب فرصة ممكنة.

بعد مرور سبعة أعوام على عام الألفين، وهو العام الذي سبق أن حُدِّد لاستئصال شلل الأطفال، لايزال النجاح غير واضح للعيان، فلم تُحقَّق إنجازات هامة عام ألفين وستة رغم الجهود الدولية المنسَّقة لاحتواء فيروس شلل الأطفال، فاستمر سريانه في جيوب قليلة في أربعة بلدان يتوطن فيها. ويواجه برنامج استئصال شلل الأطفال عقبات جديدة مثل وفادته وانبعاثه والفشل في استنهاض السياسيين واستنهاض المجتمع. ويلقي تضاؤل الحماس لدى العاملين والمتطوعين الصحيين بظلال الشك حول نجاعة اللقاح الفموي المضاد لشلل الأطفال وحول ما تفرضه البرامج من تكاليف تتزايد دون توقف، وحول التحديات في التمويل، وهي من القضايا التي ينبغي التصدي لها ومعالجتها. وتقدم هذه الورقة وصفاً للاستراتيجية المعهودة التي يجري العمل

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