Poliomyelitis surveillance: the model used in India for polio eradication

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Poliomyelitis surveillance in India previously involved the passive reporting of clinically suspected cases. The capacity for detecting the disease was limited because there was no surveillance of acute flaccid paralysis (AFP). In October 1997, 59 specially trained Surveillance Medical Officers were deployed throughout the country to establish active AFP surveillance; 11 533 units were created to report weekly on the occurrence of AFP cases at the district, state and national levels; timely case investigation and the collection of stool specimens from AFP cases was undertaken; linkages were made to support the polio laboratory network; and extensive training of government counterparts of the Surveillance Medical Officers was conducted. Data reported at the national level are analysed and distributed weekly. Annualized rates of non-polio AFP increased from 0.22 per 100 000 children aged under 15 years in 1997 to 1.39 per 100 000 in 1999. The proportion of cases with two adequate stools collected within two weeks of the onset of paralysis increased from 34% in 1997 to 68% in 1999. The number of polio cases associated with the isolation of wild poliovirus decreased from 211 in the first quarter of 1998 to 77 in the first quarter of 1999. Widespread transmission of wild poliovirus types 1 and 3 persists throughout the country; type 2 occurs only in Bihar and Uttar Pradesh. In order to achieve polio eradication in India during 2000, extra national immunization days and house-to-house mopping-up rounds should be organized.

Keywords: epidemiological surveillance; India; poliomyelitis; paralysis, classification and epidemiology; programme development.

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Introduction

Following the adoption of the global eradication initiative (1) the annual number of polio cases reported worldwide declined from 35 251 in 1988 to 5673 in 1998 (2). India, which began relatively late to implement the recommended eradication strategies, consistently accounts for over 50% of the reported cases. In 1999 the remaining reservoirs of wild poliovirus transmission appeared to be largely in the Indian subcontinent and sub-Saharan Africa.

The basic strategies for eradicating polio involve the following:

- immunization of every child aged under 1 year with at least three doses of oral polio vaccine (OPV);
- national immunization days (NIDs) in countries where polio is endemic, when every child aged

- under 5 years receives two extra doses of OPV on two days separated by four to six weeks;
- surveillance of acute flaccid paralysis (AFP) to identify all reservoirs of wild poliovirus transmission;
- extensive house-to-house immunization mopping-up campaigns in the final stages in areas where wild poliovirus transmission persists (3).

India's routine immunization programme began in 1978. The use of OPV was introduced as a part of the Universal Immunization Programme in 1985 and reached all districts by 1990. At state level the reported coverage of OPV3 in children aged under 1 year ranges from under 50% to over 95%, although nationally the figure was above 90% from 1990 to 1997 (4). However, the administrative reporting system consistently overestimated coverage: thus a national survey in 1992–93 indicated that coverage among infants aged under 1 year in 1991 was only 53% (5), and a comparable survey yielded a coverage figure of 73% for 1997 (6).

The first OPV immunization days using extensive social mobilization were organized in Delhi in 1994, when over 90% of the children in most areas of the state were immunized (7). This led to the implementation of the first NID in 1995, targeting children aged over 3 years throughout India. The three NIDs organized since 1996 targeted children

Ref. No. 99-0252

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aged under 5 years and achieved national coverage exceeding 90%. (8). On average, at least 125 million children have been immunized every year in NIDs since 1996; 133 million were covered in 1999; however, it is estimated that 14 million children were not reached during each campaign.

Before October 1997, surveillance for polio in India consisted of the passive reporting of clinically suspected cases among children aged under 5 years. Since there was no surveillance of AFP cases, the ability of the system to detect polio was limited. In 1995 the target for surveillance was raised so as to include all children aged <15 years.

The development of polio surveillance in India since 1997 is outlined below and recommendations are presented for improving the system with a view to reaching the eradication goal during 2000.

Methods

The National Polio Surveillance Project (NPSP) was established in May 1996 (9). By October 1997, a total of 59 specially trained Surveillance Medical Officers (SMOs) were deployed throughout the country. A central coordinating unit, the National Polio Surveillance Unit (NPSU), was created in New Delhi to provide technical assistance, training and logistic support to all SMOs in the field. More than 7500 health care institutions were enrolled in a nationwide reporting network, which has since been expanded to 11 533 units. These are responsible for collecting epidemiological and virological information for each reported case of AFP.

Stool specimens collected from AFP cases are sent to nine laboratories that are accredited by WHO for poliovirus isolation studies; two of these laboratories also serve as reference sources for the intratypic differentiation of wild and vaccine-derived strains (10).

A case of AFP is defined as occurring if there is acute onset of flaccid paralysis without obvious cause (such as severe trauma or electrolyte imbalance) in a child aged <15 years, or if there is paralytic illness in which polio is suspected in a person of any age. The epidemiological, clinical (including initial investigation and 60-day follow-up examination to assess the presence of residual weakness) and laboratory information collected is used to classify AFP cases as either polio or non-polio.

Two adequate stools are defined as two stool specimens collected from an AFP case at least 24 hours apart, within 14 days after the onset of paralysis, and received by a WHO-accredited laboratory in sufficient quantity (>5 g) and in good condition, i.e. specimens must arrive at the laboratory with adequate documentation, no leakage or desiccation, and evidence that the cold chain was maintained.

An AFP case is confirmed as being one of polio if one of the following applies:

wild poliovirus is isolated in the stools; or

 in the absence of two adequate stool samples, residual weakness is present 60 days after the onset of paralysis, or the patient dies or is otherwise unavailable for the 60-day follow-up.

AFP cases for which two adequate stool samples have given negative results in respect of wild poliovirus are classified as non-polio even if there is residual weakness at the 60-day follow-up examination. In the absence of two adequate stool samples, only AFP cases with no residual weakness at the 60-day follow-up examination are classified as non-polio. The following are major indicators that a polio surveillance system is performing well:

- a reported annual non-polio AFP rate of ≥1 per 100 000 children aged <15 years;
- ≥80% of AFP cases with adequate stool collection:
- isolation of non-polio enterovirus from ≥ 10% of stool specimens;
- ≥80% of laboratory results reported within 28 days of receipt of specimens.

Results

The surveillance network reported 3048 and 9467 cases of AFP in 1997 and 1998, respectively (Table 1 and Table 2); also in the respective years, 2106 (69%) and 8453 (89%) cases were investigated within 48 hours of reporting, and 1037 (34%) and 5543 (59%) had two adequate stool specimens. Of the 3688 specimens collected in 1997, 3511 (95%) were received in the laboratory in good condition for virological studies, as were 15560 (98%) of the 15860 collected in 1998. The reported non-polio AFP rate was 0.22 per 100000 children aged <15 years in 1997 and 1.46 per 100000 in 1998.

From January to April 1999 the network reported 2195 cases of AFP. Of these, 2037 (93%) were investigated within 48 hours of reporting, and for 1494 (68%) there were two adequate stool specimens. Of the 3989 specimens collected during this period, 3951 (99%) were received in the laboratory in good condition for virological studies. The annualized reported non-polio AFP rate was 1.39 per 100 000 children aged <15 years; 23 AFP cases still await classification.

Of the AFP cases reported, 2278 and 4316 were confirmed as polio in 1997 and 1998, respectively. Of the confirmed cases, 534 and 1932 were confirmed by wild poliovirus isolation in the respective years. Of the AFP cases confirmed as polio in 1997 without isolation of wild poliovirus, 1298 were determined on the basis of residual paralysis, 243 because of the absence of a 60-day follow-up examination, and 203 because death occurred before follow-up. The corresponding numbers for 1998 were 1755, 149, and 480 (Fig. 1).

Of the AFP cases reported from January to April 1999, a total of 461 were confirmed as polio. Of the latter, 77 were determined by wild poliovirus

Table 1. Number and rate of reported poliomyelitis and acute flaccid paralysis (AFP) cases, non-polio AFP rate, and stool specimen results, India, 1995–99

| Year | No. of polio or AFP cases reported | No. of confirmed polio cases ^a | Overall AFP reporting rate ^b | Non-polio AFP reporting rate ^b | No. of polio or AFP cases with two stool specimens within 14 days | Serotype distribution of wild poliovirus isolated | | |
|------|---|--|--|--|---|---|-----------------|------------------|
| | | | | | | P1 | P2 | Р3 |
| 1995 | 3263 | 3263 | 0.95 | 0 | NA ^c | 117 ^d | 44 ^d | 60 ^d |
| 1996 | 1005 | 1005 | 0.29 | 0 | NA | 95 ^d | 6 ^d | 17 ^d |
| 1997 | 3048 | 2278 | 0.86 | 0.22 | 1037 (34) | 479 ^f | 5 ^f | 55 ^f |
| 1998 | 9467 | 4316 | 2.68 | 1.46 | 5543 (59) | 1732 ^f | 83 ^f | 190 ^f |
| 1999 | 2195 ⁹ | 461 ^g | 1.78 ^h | 1.39 ⁱ | 1494 (68) | 46 | 6 | 25 |

^a All polio cases reported before 1997 were confirmed by attending physicians with no standard case definition.

Table 2. Classification of AFP cases and key surveillance indicators, India, 1998 and 1999^a

| Year | Number | Polio | | Discarded | Pending | Non-polio | % with two |
|---------------------------|---------------------------|-------------|-------------------------|--------------------|----------|-----------------------|--------------------------------|
| | of AFP cases ^b | Total | Wild polio- virus | (non-polio AFP) | | AFP rate ^c | specimens within 14 days |
| 1998 1999 ^a | 9467 4450 | 4316 674 | 1932 160 | 5150 2947 | 1 829 | 1.46 1.39 | 59 72 |

^a Including AFP cases with onset in 1999 and reported up to week 30 ending 31 July 1999.

isolation. Of the AFP cases otherwise confirmed as polio, 279 were determined on the basis of residual paralysis, eight because of the absence of a 60-day follow-up examination, and 97 because of death before follow-up.

Non-polio enteroviruses were isolated from 12% of the 3688 specimens collected in 1997, and reports were obtained within 28 days for 34% of these specimens. The corresponding proportions for the 15 860 specimens collected in 1998 were 14% and 34%, while those for the 3989 specimens collected from January to April 1999 were 13% and 84%, respectively.

AFP cases should be classified as being caused by wild poliovirus within 90 days of the onset of paralysis. On this basis the results for the first quarter of 1999 can be compared with those for the first quarter of 1998. From January to April 1999, a total of 77 AFP cases were confirmed by culture as involving wild poliovirus; for the same period in 1998 the number was 211, suggesting a 63% reduction in polio cases confirmed in this way. However, in India the

polio season starts in July and lasts until September. Polio cases associated with wild poliovirus isolation remain widely dispersed geographically (Fig. 2 and Fig. 3).

The median age of children with polio was 16 months in 1997 and 20 months in 1998; these values are similar to those reported in 1984 (11, 12).

Discussion

India, the largest country in which polio is endemic, accounts for over 50% of the cases of poliomyelitis reported globally. Progress in India is therefore critical if the global initiative is to succeed. In 1998, less than a year after NPSP was established, AFP surveillance indicators in India almost reached the international standards required for certification. Experience in other countries and regions of the world shows that it usually takes several years longer than this to progress to such a level of surveillance (1, 13, 14). The certification of polio eradication

^b Per 100 000 children aged under 15 years.

^c NA = not available.

^d Aggregate data indicating the number of isolates reported to WHO (not the number of cases with wild poliovirus isolated).

^e Figures in parentheses are percentages.

f Including mixtures of wild polioviruses.

^g January to April, as of 31 July 1999.

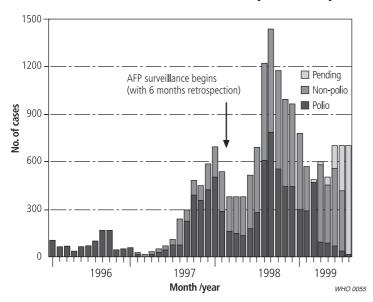
^h Annualized rate.

i Annualized from cases reported from January to April (as of 31 July 1999), not including 23 AFP cases (1%) awaiting classification.

^b Annualized rate of AFP cases.

 $^{^{\}rm c}$ No. of discarded (non-polio AFP) cases per 100 000 children aged <15 years; the expected rate is \geqslant 1 per 100 000.

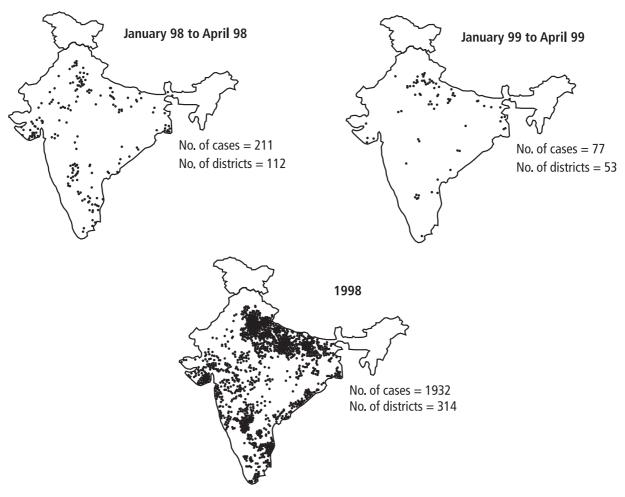
Fig. 1. Distribution of cases of acute flaccid paralysis (AFP), by classification and month of onset, India, January 1996–17 July 1999



relies heavily on surveillance (15) and requires a reported non-polio AFP rate of at least 1.0 per 100 000 population aged <15 years and an adequate stool collection rate of at least 80%. Sufficient data of adequate sensitivity and quality show that the strategies are working in India and that the incidence of polio has dropped significantly. The transmission of wild poliovirus has been greatly reduced but remains widespread. The surveillance data should now be used to bring about actions for achieving the eradication target during 2000.

Since the implementation of NPSP, two technical and two management reviews of the project have been conducted by partner agencies. The results were encouraging and suggested the data to be consistently of high quality. Teams of experts tracked the accuracy of the diagnosis of reported AFP cases, conducted active searches to validate that AFP cases and reservoirs of transmission were not missed, and evaluated the quality of laboratory services to ensure that if virus was present in a specimen it would be detected.

Fig. 2. Map showing districts in India with wild poliovirus, January 1998 to April 1999



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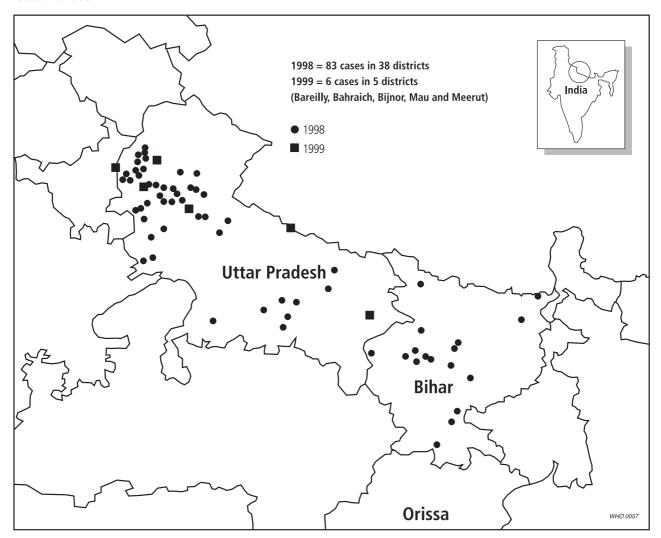


Fig. 3. Map showing distribution of cases of poliomyelitis caused by type 2 wild poliovirus in selected districts, 1998 and 1999

In India the analysis of vaccine coverage data in order to target disease control strategies is difficult. Reported administrative coverage exceeds coverage obtained from surveys. This magnifies the importance of good surveillance data that can adequately describe the epidemiology of vaccine-preventable diseases and correctly identify high-risk areas for targeted action. For polio eradication, surveillance must be very sensitive in order to identify all reservoirs of wild poliovirus transmission and must also be of high quality so that actions are not misguided.

No wild poliovirus has been isolated in 12 of the 32 states and union territories since 1998 (Andaman and Nicobar Islands, Arunachal Pradesh, Himachal Pradesh, Jammu and Kashmir, Kerala, Lakshadweep, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, and Tripura). However, the transmission of wild poliovirus types 1 and 3 is widespread elsewhere and the apparent decrease in transmission during 1999 occurred before the start of the peak polio season (July to September) (Table 3). This indicates the need for extra rounds of NIDs before mopping-up strategies are fully implemented. Wild

poliovirus type 2 circulation remains widespread in Uttar Pradesh and Bihar.

Experience in many countries has shown that polio eradication activities can serve as a platform for strengthening other immunization and preventive health services. This means that critical elements of the polio eradication strategies — capacity for surveillance, political commitment, international partnerships and integration of preventive services — can be used to strengthen routine services.

An eradication goal changes the focus of programmatic activity towards the measurement of new cases of disease as the outcome indicator. Completely stopping disease transmission requires that the intervention — polio immunization in the present instance — should reach all targeted individuals, including the populations at highest risk as identified by disease surveillance. Equity is thus achieved by delivering health interventions to all children, not just to those most easily reached. This means giving special attention to the children in greatest need.

Table 3. Classification of AFP cases and key surveillance indicators by states and union territories, India, 1998

| State/union territory | Polio | | | | | | |
|------------------------|---------------------|-------|--------------------|---------------------------------|---------|------------------------------------|---|
| | No. of AFP cases | Total | Wild poliovirus | Discarded (non-polio AFP) | Pending | Non-polio AFP rate ^a | % with two specimens within 14 days |
| Andhra Pradesh | 457 | 176 | 96 | 281 | 0 | 1.09 | 61 |
| Andaman and Nicobar | 2 | 0 | 0 | 2 | 0 | 1.61 | 0 |
| Arunachal Pradesh | 11 | 3 | 0 | 8 | 0 | 2.08 | 64 |
| Assam | 80 | 10 | 1 | 70 | 0 | 0.69 | 73 |
| Bihar | 935 | 410 | 158 | 524 | 1(OK) | 1.34 | 54 |
| Chandigarh | 19 | 4 | 1 | 15 | 0 | 5.24 | 68 |
| Dadra and Nagar Haveli | 4 | 1 | 1 | 3 | 0 | 4.84 | 100 |
| Daman and Diu | 7 | 5 | 5 | 2 | 0 | 4.44 | 43 |
| Delhi | 216 | 94 | 47 | 122 | 0 | 2.78 | 68 |
| Goa | 24 | 7 | 2 | 17 | 0 | 3.29 | 67 |
| Gujarat | 513 | 272 | 163 | 241 | 0 | 1.48 | 64 |
| Haryana | 315 | 140 | 39 | 175 | 0 | 2.35 | 56 |
| Himachal Pradesh | 58 | 7 | 0 | 51 | 0 | 2.31 | 78 |
| Jammu and Kashmir | 107 | 2 | 0 | 105 | 0 | 3.20 | 93 |
| Karnataka | 321 | 156 | 71 | 165 | 0 | 0.93 | 64 |
| Kerala | 154 | 17 | 0 | 137 | 0 | 1.51 | 76 |
| Lakshadweep | 1 | 0 | 0 | 1 | 0 | 4.35 | 0 |
| Madhya Pradesh | 519 | 237 | 107 | 282 | 0 | 0.95 | 56 |
| Maharashtra | 769 | 228 | 121 | 541 | 0 | 1.74 | 70 |
| Manipur | 17 | 0 | 0 | 17 | 0 | 2.09 | 76 |
| Meghalaya | 16 | 2 | 0 | 14 | 0 | 1.78 | 88 |
| Mizoram | 12 | 0 | 0 | 12 | 0 | 3.91 | 33 |
| Nagaland | 19 | 6 | 0 | 13 | 0 | 2.40 | 58 |
| Orissa | 404 | 114 | 49 | 290 | 0 | 2.31 | 72 |
| Pondicherry | 12 | 3 | 2 | 9 | 0 | 2.51 | 83 |
| Punjab | 122 | 28 | 9 | 94 | 0 | 1.19 | 62 |
| Rajasthan | 448 | 254 | 62 | 194 | 0 | 0.93 | 43 |
| Sikkim | 6 | 1 | 0 | 5 | 0 | 2.78 | 83 |
| Tamil Nadu | 498 | 143 | 91 | 355 | 0 | 1.95 | 76 |
| Tripura | 32 | 2 | 0 | 30 | 0 | 2.46 | 91 |
| Uttar Pradesh | 3000 | 1898 | 881 | 1102 | 0 | 1.71 | 49 |
| West Bengal | 369 | 96 | 26 | 273 | 0 | 0.98 | 56 |
| Total | 9467 | 4316 | 1932 | 5150 | 1 | 1.46 | 59 |

^a Non-polio AFP cases per 100 000 children aged < 15 years; the expected rate is \ge 1 per 100 000.

The identification of persistent reservoirs of wild poliovirus type 2 has far-reaching implications for future prevention strategies. This is the first poliovirus type to disappear following successful immunization programmes. It disappears as a consequence of the moderate levels of OPV 3 coverage achieved through routine immunization programmes. Its existence signifies grave deficiencies in an immunization delivery system and should be aggressively used to promote immunization services in the areas concerned. Communities where wild poliovirus type 2 persists represent the worst levels of immunization access where both the routine immunization programme and NIDs have failed to achieve moderate levels of coverage.

One of the major objectives of surveillance should therefore be to achieve equity by helping to ensure access to basic preventive health services for all children. Lessons learned from polio eradication have relevance to the problem of reaching the unreached in all areas of a given country.

By late 2000 it is intended that all AFP reporting units in India should be reporting neonatal tetanus (NT) cases on a weekly basis, including zero NT reporting. District-level line listing of all reported NT cases is to be developed and maintained. The data are to be used to identify and target high-risk areas for conducting tetanus toxoid immunization campaigns and for evaluating their impact.

The effective surveillance of infectious disease requires the coordination of field activities with the work of a highly competent network of public health laboratories. The SMOs meet the virologists of the polio laboratories every week to discuss the results of investigations, potential constraints, and follow-up action on pending specimens. The SMOs also meet quarterly to review the findings of data analysis, discuss strategies required for polio eradication, improve management procedures and take corrective action.

Effective disease surveillance is essential for guiding disease control activities, monitoring programme performance, and allocating scarce resources. The reporting system provides the basis for the flow of information, which is vital for the implementation of activities and programme administration. While AFP surveillance is being strengthened, efforts should also be made to ensure that the infrastructure, logistics and training capacities are developed. The health care delivery system itself can strengthen surveillance for other diseases as well. The experience and lessons of AFP surveillance should be adopted wherever feasible or adapted in relation to other vaccine-preventable diseases (16).

Strategies have been proposed for measles control in the countries where polio is still endemic (16), and a plan of action for measles control activities has been developed. The Polio Laboratory Network of the South-East Asia Region serves as a model and can provide the infrastructure on which a measles laboratory network should be built. However, substantial additional staff, funds and time are needed. For the countries in the region where polio is endemic the priority is to ensure that their surveillance systems for polio can demonstrate the interruption of poliovirus transmission. Improved measles surveillance, using laboratory confirmation to diagnose outbreaks, will be an essential first step for strengthening measles control activities in India.

The strategic plan for the surveillance of vaccine-preventable and other infectious diseases in

India involves using as a foundation the infrastructure created and nurtured by the Polio Eradication Initiative. The key element in the success of polio surveillance has been the deployment of well-trained persons dedicated to the task, supported adequately by NPSU with transport, feedback, data analysis and accounting systems, and backed by a reliable laboratory network.

Acknowledgements

The work described in the present paper was supported by: the Danish Agency for International Development (DANIDA); the United States Agency for International Development (USAID); Rotary International; Centers for Disease Control and Prevention (CDC), Atlanta, GA, USA; and the World Health Organization. The national staff of the Indian Ministry of Health and Family Welfare at all levels, particularly the State and District Immunization Officers, have dedicated themselves to sustaining immunization and polio eradication efforts. Our special thanks go to the team of Regional Coordinators and Surveillance Medical Officers for their tireless work in investigating AFP cases, gathering data and using it to target immunization activities. We gratefully acknowledge the support of Ms Sunita Durrani and her team at NPSP for providing excellent data analysis at short notice. We also thank the entire supporting staff at NPSP for their dedication and commitment to polio eradication.

Résumé

Surveillance de la poliomyélite : modèle utilisé en Inde pour son éradication

La surveillance de la poliomyélite en Inde consistait auparavant en une notification passive des cas cliniquement suspects. La capacité de détecter la maladie était limitée car il n'y avait pas de surveillance de la paralysie flasque aiguë (PFA). En octobre 1997 ont été déployés dans l'ensemble du pays 59 médecins chargés de mettre en place une surveillance active des cas de PFA; 11 533 postes de notification ont été créés pour rapporter sur une base hebdomadaire le nombre de cas de PFA aux niveaux du district, de l'Etat et du pays. Les investigations sur les cas ont été rapidement menées et des échantillons de selles ont été recueillis chez les malades. Des liens ont été établis pour renforcer le réseau de laboratoires de la poliomyélite, et les homologues nationaux des médecins chargés de la surveillance ont reçu une formation poussée. Les données notifiées au niveau national sont analysées et distribuées une fois par semaine. Les taux annualisés de PFA non poliomyélitique sont passés de 0,22 pour 100 000 enfants de moins de 15 ans en 1997 à 1,39 pour 100 000 en 1999. La proportion de cas pour lesquels deux échantillons de selles ont été recueillis dans les deux semaines suivant le début de la paralysie est passée de 34 % en 1997 à 68 % en 1999. Le nombre de cas de poliomyélite associés à l'isolement du poliovirus sauvage est tombé de 211 pour le premier trimestre

1998 à 77 pour le premier trimestre 1999. Dans 12 des 32 Etats et territoires, aucun poliovirus sauvage n'a été isolé depuis 1998 (Iles Andaman et Nicobar, Arunachal Pradesh, Himachal Pradesh, Jammu et Cachemire, Kerala, Lakshadweep, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura), mais la transmission des poliovirus sauvages de types 1 et 3 est répandue dans les autres régions et la baisse apparente de la transmission observée en 1999 est intervenue avant le début du maximum de la saison poliomyélitique (juillet à septembre). Il est donc justifié d'organiser des séries supplémentaires de journées nationales de vaccination avant de mettre en œuvre les stratégies de « ratissage » des cas. La circulation du poliovirus sauvage de type 2 est encore répandue dans l'Uttar Pradesh et le Bihar.

L'expérience de nombreux pays montre que les activités d'éradication de la poliomyélite peuvent servir de plate-forme pour renforcer d'autres services de vaccination et de médecine préventive. Ainsi, les éléments critiques des stratégies d'éradication de la poliomyélite — capacité de surveillance, engagement politique, partenariats internationaux et intégration des services de médecine préventive — peuvent être utilisés pour renforcer les services courants.

En présence d'un objectif d'éradication, l'activité programmatique est davantage axée sur la mesure des

nouveaux cas de maladie comme indicateur de résultat. Pour stopper complètement la transmission de la maladie, il faut que l'intervention — dans le cas présent, la vaccination antipoliomyélitique — touche l'ensemble des personnes visées, y compris les populations à haut risque identifiées par les services de surveillance. Les interventions de santé bénéficient ainsi de façon équitable à tous les enfants et non pas uniquement

aux plus faciles à atteindre. Cela signifie qu'il faut être particulièrement attentif à ceux qui sont les plus démunis.

Pour parvenir à l'éradication de la poliomyélite en Inde au cours de l'an 2000, il faudra en conséquence organiser de nouvelles journées nationales de vaccination et procéder à un « ratissage » de maison en maison.

Resumen

Vigilancia de la poliomielitis: modelo empleado en la India para su erradicación

La vigilancia de la poliomielitis en la India se basaba antes en la notificación pasiva de los casos clínicos sospechosos. La capacidad de detección de la enfermedad se veía limitada por la falta de vigilancia de la parálisis fláccida aguda (PFA). En octubre de 1997, 59 médicos especialmente adiestrados para esa vigilancia fueron desplegados por todo el país para implantar un control activo de los casos de PFA; se crearon 11 533 unidades para que informaran semanalmente sobre la aparición de tales casos a nivel distrital, estatal y nacional; se investigaban en el momento oportuno los casos de PFA, obteniendo muestras de heces de los mismos; se establecieron vínculos para apoyar la red de laboratorios de análisis relacionados con la poliomielitis; y se impartió una amplia formación a homólogos de los médicos de vigilancia en el sistema público. Los datos notificados a nivel nacional son analizados y distribuidos semanalmente. Las tasas anualizadas de PFA no poliomielítica aumentaron del 0,22 por 100 000 niños < 15 años en 1997 a 1,39 por 100 000 en 1999. La proporción de casos con dos muestras de heces adecuadas obtenidas dentro de las dos semanas siguientes a la aparición de la parálisis aumentó del 34% en 1997 al 68% en 1999. El número de casos de poliomielitis en que se aisló el poliovirus salvaje disminuyó de 211 en el primer trimestre de 1998 a 77 en el primer trimestre de 1999. En 12 de los 32 estados y territorios de la unión no se ha aislado el poliovirus desde 1998 (Islas Andaman y Nicobar, Arunachal Pradesh, Himachal Pradesh, Jammu y Kashmir, Kerala, Lakshadweep, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim y Tripura), pero en el resto del país se da una transmisión generalizada del poliovirus salvaje de los tipos 1 y 3, y la aparente disminución de la transmisión observada

durante 1999 se produjo antes del comienzo de la temporada de auge de la poliomielitis (entre julio y septiembre). Así pues, está justificado organizar rondas adicionales de días nacionales de inmunización antes de pasar a aplicar resueltamente estrategias de barrido. El poliovirus salvaje de tipo 2 sigue circulando abundantemente en Uttar Pradesh y Bihar.

La experiencia adquirida en numerosos países ha demostrado que las actividades de erradicación de la poliomielitis pueden servir de plataforma para reforzar otros servicios de inmunización y de salud preventiva. Ello significa que es posible utilizar elementos críticos de las estrategias de erradicación de la poliomielitis —como son la capacidad de vigilancia, el compromiso político, los lazos de asociación internacionales y la integración de los servicios preventivos— para fortalecer servicios asistenciales rutinarios.

La existencia de una meta de erradicación reorienta las actividades programáticas hacia la medición de los casos nuevos como indicador de los resultados. Para frenar por completo la transmisión de la enfermedad es necesario que la intervención —la inmunización contra la poliomielitis en este caso—alcance a todos los individuos previstos, en particular a las poblaciones en mayor riesgo identificadas mediante los sistemas de vigilancia. Equidad, en estas circunstancias, significa hacer llegar las intervenciones sanitarias a todos los niños, no sólo a los más accesibles, y para ello hay que prestar especial atención a los niños más necesitados.

Así pues, para conseguir erradicar la poliomielitis en la India durante el año 2000, deberían organizarse días nacionales de inmunización adicionales y rondas de barrido casa por casa.

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