

## **The polio eradication campaign in Assam, by Rajashri Dasgupta**

The north-eastern state of Assam has been listed as a high-risk state because local tensions and poor communications have raised doubts about the quality of routine coverage as well as surveillance. The state's geographic location also puts it at risk: it shares a long and porous international border with Bangladesh and is located right next to the Indian state of West Bengal, both places where the P2 virus has been isolated.

The relatively few confirmed polio cases in the state (10 in 1998 going up to 14 as of December 4, 1999, with no wild virus isolated this year) do not necessarily indicate an effective polio campaign. The low figures could well be because of poor surveillance. Sonitpur district reported a relatively large number of polio cases – five out of a total of 14 this year.

Some other impediments to the campaign are: an inadequate health infrastructure, poor coordination between the public services and private practitioners on whom many people depend for health care, limited mobilisation in interior areas, lack of coordination between the different organisations in the campaign, and limited publicity. Finally, frequent power failures continue to threaten the maintenance of the cold chain for vaccines

### **The state of shifting sands**

The challenge of the polio eradication initiative is to reach every single child under the age of five, in the state's 23 geographically varied administrative districts ranging from the sparsely populated, difficult-to-access hills, to the plains and densely-populated river valleys. Border districts in particular are vulnerable to poor immunisation coverage in a state with a large migrant population.

Less than 10 per cent of the state's 27.7 crore-strong population lives in urban areas. Most of the population lives in the Brahmaputra Valley. More than 16 lakh people are believed to inhabit the *chars* or islands of "shifting sand" which dot the 2,800-km long river and its tributaries as they flow through 10 districts in the state. Some parts of the *char* areas are 'floating' islands for 30 days during rainy season, and the already poor communication is limited to boat transport. For example, most of the *chars* in Dhamaji can be approached only from Dibrugarh, and by mechanised boat.

The state is also characterised by a massive migrant community which over a century has come to make up more than 40 per cent of the state's population, whether as manual labourers on tea plantations and oil fields, or running trading and other business enterprises. Ethnicity and migration are prominent issues in Assamese politics. Since the late 1970s, violence has also resulted from clashes between the government and groups seeking political autonomy.

Programme planners encounter all these problems in their efforts to run an effective programme.

### **Health and the health services**

Health figures for the north-east region as a whole suggest that children's health is generally better than the national average, going by infant and child mortality rates – but immunisation coverage is lower than the national average. An informal survey of Guwahati slums found many unimmunised infants and children, and many mothers unaware of the importance of immunisation. Pregnant women were inadequately informed about the importance of prenatal care, tetanus immunisation, or the availability of free folic acid tablets.

The state health infrastructure is relatively poor: 581 primary health centres (PHCs), 316 dispensaries and 161 hospitals in 1995-96. Under-funded, under-stocked and under-staffed services also suffer in the absence of coordination between the several health programmes.

**Health centre or cowshed?**

***In the char areas of Barpeta district, where one of the polio cases was found this year, the primary health centre is used as a cowshed. In some places, voluntary organisations coordinate with the government to provide some preventive and minor curative services.***

Health officials were only too ready to provide instances of PHCs in the interior areas which exist only in name, of the difficulties people had reaching hospitals located far from the main town, of over-crowded but understaffed centres, of unutilised health centres in disturbed areas, and so on.

**The pulse polio campaign**

The pulse polio immunisation campaign is meant to repeatedly “flood” the entire community with a weakened version of the virus, blocking the growth of the wild virus and eventually forcing its eradication. The campaign started in 1995, with two pulses a year. In 1999, it was decided to have four pulses for the entire country, with an additional two rounds for the high-risk states.

**The piggy-back campaign**

***Vitamin A drops were given to children (9–36 months) in two districts, aiming to reach a large number of children without additional expense. However, the job required good booth management and additional training of health workers.***

The campaign was conducted through special polio immunisation booths situated all over the state. Staffed by four workers, each of the 16,500 booths is meant to reach an average of 250-300 children though in fact some booths in sparsely populated areas reached as few as 100 children, and others in urban regions covered more than 400 children in the three-day campaign.

The location of booths is meant to depend on inputs on population, accessibility, local political tensions and so on. Monitors in the campaign found that in some areas there were too few booths; some booths were almost inaccessible to the local people, particularly in the *chars*. They also noted that some booths were ran short of vaccines, and in at least one case, vaccine did not reach the booth at all.

**Open too late**

***Poor planning and transport problems forced many booths in Guwahati city to open much after the stipulated time of 8.30 a.m. Some parents did make efforts to approach another, open booth, but others may have gone back without getting their children immunised.***

Following the booth-based National Immunisation Day, over 33,000 teams of two workers traversed the state, going from village to village, house to house, in search of unimmunised children under the age of five. Evaluations found wide variations in the quality of this work.

**Students pitch in**

***Work was particularly methodical in Nalbari district where members of the local students' union volunteered for the work, accepting the honorarium of Rs 25 per worker as a donation to the union. However, it was poor in the slums and middle-class***

*houses of Guwahati city. Hurriedly-trained students in Cachar, south Assam, caused some confusion by using different methods to mark the houses they had visited.*

### **Difficult booths**

One reason Assam is a high-risk state is that almost one-fourth of the booths in the 1999 campaign are labeled “difficult”: they are located in places difficult for the health infrastructure to reach, and for the local population to utilise. This can be because of the local terrain, isolation, and political tensions – all of which can make both workers and the local population reluctant to visit them. For example, in some parts of the NC Hills and Karbi Anglong hill districts, mothers had to walk an entire day to reach a booth. There are difficult booths too in *char* areas or politically sensitive districts where Bodo militants or ULFA are active. In such cases, vaccine supplies must be sent one day before the PPI day, requiring additional planning and logistics, and feedback is often delayed.

There are difficult booths in every district, but many are concentrated in a few districts with international borders: 304 in Borpheta which borders Bhutan, 209 in Dhubri which borders Bangladesh, and 270 in Cachar, also bordering Bangladesh.

### **Coverage**

State government estimates of a little less than 39 lakh children under the age of five were belied when the October 1999 campaign administered more than 45 lakh OPV doses during the National Immunisation Day and the house-to-house campaign that followed. (Parliamentary elections postponed the October round by 10 days in two districts.) However, people in the programme found wide variations in actual coverage.

Though it was believed that booth turnout would be low in the October 1999 round as many women would stay home to celebrate Lakshmi Puja on October 24, booth turnout was actually lower in the November round, in all except two districts

It was also a matter of concern that both booth and house-to-house coverage came down in the November round, which reached only 42.62 lakh children -- higher than the official target but obviously less than the number of children needing the vaccine.

### **Booth vs. house-to-house campaigning**

Organisers have expressed concerns that the house-to-house campaign has affected booth performance. The impression seems to be that people do not make the effort to go to the booths since they would be sought out by the health workers anyway.

Many NGOs and health workers attribute low booth participation in the November round to the fact that it was harvesting season and people were reluctant to spend time to come to the booths.

While booth performance did drop in the November round, house-to-house coverage was also lower than in October. Health workers also complain of the problems of reaching every home in the *char* and hill areas, sometimes travelling by foot for an entire day to reach a single village, all the while lugging the icepacks containing the vials of vaccine. Buying lighter, portable flasks will entail additional expense. The daily honorarium of Rs 25 is felt to be inadequate has caused resentment among the volunteers. Health workers have also faced hostility in some areas – perhaps occupied by illegal migrants -- when they tried to mark each home after visiting it.

### **Poor transport and communication**

The campaign is also hampered by a serious shortage of vehicles. Two-thirds of the 1,500 vehicles needed for the campaign must be obtained hired. These include auto rickshaws, scooters, bicycles and boats.

The state director of health services, Dr SC Thakuria, points out that there were no vehicles in many interior districts. There are not more than three or four vehicles in the flood-prone Dhamaji district where communications often break down and which suffers from poor government supervision. People were transported by cycle and bullock carts in some areas, the vaccine just did not reach some parts of Darrang district which is a militant area.

While no special arrangements were made for the difficult booths in the first and second rounds of the 1999 campaign, an additional 1,180 booths were sanctioned for the third round, and the total number of 'difficult' booths has gone from 3,892 to 3,932. In addition, early in December, UNICEF sanctioned an additional Rs 24 lakh as "mobility money" for the difficult booths.

In an innovative step, district officials provided supervisors and monitors with booklets on the region's population, and maps of the regions to be covered, showing the location of roads, high-risk areas, PHCs, booths, and so on. Many of the maps were more attractive than practical, according to Dr Sajeda Ahmed, one of the monitors of the campaign. But some maps were evidence of individual people's commitment to the programme.

#### **The map maker**

*The elderly gentleman with the long,, flowing beard is a legend in his area. Mr Habibullah Bahar was well known in the Chief Medical Officer's office where he was a key person in the AFP surveillance effort for Nagaon district. His obvious commitment to the polio eradication initiative continued even after his recent retirement. It was only because of his meticulously drawn map, marking PHCs, main roads and high-risk areas that the district monitor Dr Arati Deka was able to move around the district with ease during the PPI. She was also struck by the useful details in the handbook on the area, also compiled by Mr Bahar.*

### **Mobilisation of the community**

The pulse polio programme seems to have been most successful wherever the administration has been able to mobilise the local population through community activists or leaders. Thus, in Dagoon, Nagaon district, the doctors, supervisors and helpers were all from the local community of Muslim migrants, and were trusted by them. Likewise, students in Nalbari were enthusiastic volunteers in the community.

### **Role of voluntary organisations**

Among the NGOs participating in the campaign in various capacities are the Rotary, Voluntary Health Association of India, Santi Sadhana Ashram, Kasturbha Gandhi Ashram and North East Network. Their work involves both mobilising community awareness and support, training volunteers and providing volunteers for the campaign.

However, NGO involvement has sometimes been limited by poor coordination. For example, the Voluntary Health Association of India has a network of 196 members in Assam. In early October, one of its members received a notice (without a return address) about a 'briefing' for the October round. Then, one day before the NID, she received a long form to be used for monitoring booth and house-to-house performance. It was too late to inform and mobilise their members throughout the state.

Rotary has three clubs in Guwahati and deputed 50 nurses in the city's various booths, contributed publicity material, transported people and vaccine to the booths and provided food packets for the volunteers. However, the publicity material for the October round did not arrive on time. Some people have expressed the feeling that the Rotary does not make enough use of its resources to promote the message of polio immunisation.

### **The backbone of the campaign**

One of the four volunteers in each booth is an auxiliary nurse midwife (ANM). The backbone of the health services, the ANM must provide a community of about 5,000 people with a range of services such as family planning and prenatal care, home delivery assistance, childhood immunisations, simple curative services and referrals of complicated cases to the nearest health centre. It is well known that ANMs are overworked and underpaid. Just before the October round, they had not been paid for months, and even threatened not to participate in the pulse polio campaign. The issue was apparently resolved recently.

Volunteers (including the ANMs manning the booths) are given Rs 25 per day during the booth and house to house PPI campaign for refreshment. Campaign monitors report that volunteers feel the payment does not compensate for the long hours of work during the campaign, and the rigour of house-to-house visits. They have demanded it should be raised to Rs 50 per day.

Only 20,000 vaccinators are available against the requirement of over 70,000. Only 2,000 supervisors are available against the requirement of 2,950. The shortfall of vaccinators and supervisors must be mobilised from NGOs and community volunteers. Campaign insiders have expressed reservations about the use of senior doctors and officers to monitor the work; they were more reluctant to go into 'difficult' areas. It would be more useful to train volunteers such as medical students.

### **Boost from enthusiastic officers**

The Pulse Polio campaign in the state got a boost when Commissioner (Health) A Perti took charge in August 1999. He has breathed fresh life into the campaign despite his initial reservations about the programme's feasibility given the state's poor health infrastructure, organisational capabilities and financial resources, and his fears that the programme could force a diversion of the entire health machinery from its other essential tasks. Mr Perti is respected by his colleagues for his keen interest in the campaign, his detailed knowledge of the various problems it faces, and his ability to inspire his staff to move mountains. Among the many other important activists are Dr AK Deka, the polio surveillance officer for 10 districts in Assam, and Dr S Sahu who is based in Calcutta but in charge of the entire PPI in eastern India.

### **Private doctors and the programme**

Many private doctors are not aware of the PPI campaign, its rationale, or the introduction of new technologies such as the vaccine vial monitor. Information provided to the Indian Medical Association and Indian Academy of Paediatricians does not always get disseminated among their membership. Still, there are stories of personal enterprise.

#### ***An enterprising doctor***

***A local doctor in Mandai found that the river running through his area had shifted course, making booths that had been located on the basis of the previous campaign highly inconvenient for parents to reach. Not only did the doctor personally carry the vaccine to his area one day before the campaign; he took the initiative of splitting the***

*team of volunteers and setting up an additional booth, making it easier for parents to attend the immunisation.*

### **Surveillance**

The campaign depends on complete immunisation coverage as well as an efficient surveillance system. A good surveillance system – supported by additional targeted immunisation of all contacts of a suspected case – is expected to be the final blow in the eradication campaign.

All cases of acute flaccid paralysis in the state are to be reported to the surveillance authorities. Within 14 days of the paralysis' onset, two stool samples are to be sent in refrigerated containers to specially designated laboratories to see if the paralysis was caused by the polio virus. Even if the laboratory does not find the polio virus, any case of AFP persisting beyond 60 days is presumed to be polio.

The number of districts in which samples reach the laboratory in proper condition and within the prescribed period has gone from 73 per cent in 1998 to 82 per cent in 1999. Districts with poor performance have gone down from seven in 1998 to four in 1999, though three of them performed better the previous year.

In 1998, at least seven of the 10 'confirmed polio' cases died before a sample could be taken. Only one of the 14 "confirmed polio" cases in 1999 was confirmed through laboratory testing.

A non-polio AFP detection rate of 1/100,000 indicates that all cases of AFP are identified, including AFP due to polio. The non-polio AFP rate in Assam went from .69/100,000 in 1998 (a total of 80 cases) to a 'healthy' 1.29/100,000 by October 1999 (151 cases). But district-wise variations indicate pockets from where there is just not enough information. Though the non-AFP detection rate in the hill district of Karbi Anglong was 2.53/100,000, it was just 0.58 in Dhamaji, 0.46 in Dibrugarh, 0.33 in Kokrajahar, and 0.27 in Sibsagar. One reason for these low rates could be the sparse population where a single case can make a drastic difference to the figures in a district.

There are other factors contributing to poor AFP reporting and sample collection: Till recently, only one surveillance medical officer was responsible for the entire state, though work is now divided among three officers. Second, there is inadequate coordination between private practitioners and the surveillance system. Finally, a poor health infrastructure, especially in the urban areas, prevents the poorest of the poor from reaching the health services in time.

### **The media and the message**

The festivity and enthusiasm with which the PPI campaign took off in 1995 seems to be dying down, and health workers in the state associated with the programme for some years complain of a sense of fatigue and complacency. There are some indications of poor mobilisation this year.

Media coverage of the polio campaign has been poor. According to Mr Perti, simple, low-cost methods of information are effective than a high-pitched media campaign. Most people get information from local health workers, by word of mouth, or by announcements in marketplaces or places of worship. Microphone announcements, posters and banners do not seem to have an impact on people's decision to visit a booth on the NID.

### **What pulse polio?**

*It was worth noting that some senior paediatricians in Guwahati were not aware of the October NID. Some monitors did not know that Assam will have six rounds of polio (instead of four), or why this is so.*

Many people commented on the poor quality of the state government's publicity machinery, which was believed to start planning in the week just before the PPI campaign. They also noted that journalists are never approached for media coverage. Also, the state government doesn't even hold a press conference to inform the media. There announcements in the press, by the state government and the government of India. Many urban, educated parents said they came to know about the PPI campaign through these ads and some also from their doctors.

*Forty children among the Garo Christians in Goalpara were not immunised in the October 1999 round, apparently because the parents felt the OPV was a population control measure. Though medical officers visited the area to convince the parents, they could not persuade them to participate in the November round.*

*On the other hand, a good rapport with the community and proper information dissemination must have played a key role when a five-year-old child in Barpeta died shortly after being immunised. The grieving mother understood that her child's death was caused by pneumonia and did not blame the programme for her child's death, according to one of the monitors.*

### **Pulse polio versus routine immunisation**

Some senior health officials have worried that the time, resources and manpower spent on the pulse polio campaign result in the neglect of routine health services including immunisation. The district commissioner who did once expressed these views now believes that the campaign can actually work to promote the message of immunisation in general. Surveillance officials note the decline in routine immunisation, but point out that this trend goes back to 1991, whereas the pulse polio campaign started only in 1995.

### **Hard-to-reach areas**

Despite the best efforts of campaign officials, health workers and voluntary organisations, there are a number of problem areas in the state where it has been very difficult to provide immunisation services as well as set up an effective surveillance machinery.

Some of the obstacles are physical -- long distances, poor transport, poor health services -- for which infrastructural inputs could make some difference. Coverage in the tea gardens is thought to be relatively low, though doctors in these gardens are quite familiar with the campaign. Tea garden workers, all migrants from out of the state, make up 18 percent of the population and are the 'most difficult' population group: they do not speak the state language, and as a 'floating' population without political patrons, they are a neglected community. The PPI does not have any special programme for these difficult areas.

Likewise, many of the 16 lakh population spread out over 2,000 villages in the *char* areas have no electricity, and eke out an existence through daily wage labour while combating constant erosion. Health facilities are non-functional, as workers prefer to 'commute' from outside the *char*, and better facilities are difficult to reach.

Finally, rapidly growing trading towns with mixed and floating populations, crowded slums and poor water and sanitation facilities are most vulnerable to outbreaks of infectious diseases including polio. Haphazard urban growth sabotages efforts to define and map the localities and

plan a campaign. Guwahati's population is estimated to be twice the official figure of 8 lakh. Unrealistic population figures led to faulty planning and tremendous confusion in the recent campaign. Some booths had to cater to more than thrice the planned 250 children. Large Bihari populations were unable to comprehend IEC literature which was given in Assamese. These problems will have to be tackled by the campaign in the future.

### **Militancy, ethnic tensions and the polio campaign**

However, many under-served populations live in areas where the socioeconomic and political obstacles will be much more difficult to tackle since the solutions cannot be found within the health system.

Various socioeconomic factors have promoted a number of armed militant movements in the state, and parts of some districts have been declared 'disturbed areas'. North Cachar Hills and Karbi Anglong in south Assam which share borders with Bangladesh, Meghalaya and Manipur. These hill districts are 'disturbed areas,' the hills and forest provide good cover for militants who also tend to take shelter here, from other parts of Assam and neighbouring Manipur. Most of these areas are inaccessible except by foot. Though the militants have not threatened the health services, general health workers are afraid to enter certain villages. These areas were avoided during the pulse polio campaign as well. This problem is a serious challenge to the campaign's effectiveness.

#### **Militants and the community**

*It has been reported that in some areas, Bodo militants volunteered to carry the vaccine to the interior of the state. Their social contribution to the campaign needs to be highlighted. Proposals to use the army and local police in difficult areas for the pulse polio campaign could backfire if the militants' current support turns into active hostility.*

The undercurrents of ethnic tension can affect PPI work when workers who come from different ethnic groups are reluctant to work together. Unofficial migration into Assam from Bangladesh creates pressure on land and jobs and exacerbates existing ethnic tensions. Assamese workers are reluctant to work in immigrant areas with a large Muslim population.

### **The challenges ahead**

"Assam was listed as a high-risk state because we just didn't know what was going on there," commented a senior official in the campaign. In the last two years, a surveillance machinery has been set up, and the state government has made a variety of efforts to enlist the support of NGOs and local leadership, as well as to use the resources of international partners in the campaign to reach the oral polio vaccine to every child in the state. The campaign is bound to face the difficulties that plague all health services in the state. Only time will tell whether it will win the battle against the polio virus.