

Immunization Focus

A quarterly publication of the Global Alliance for Vaccines and Immunization

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GAVI

GAVI is a partnership of public and private organizations dedicated to increasing children's access worldwide to immunization against killer diseases.

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Immunization Focus

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Vaccine deal for feared strain of meningitis 'is imminent'

WITH two months to go before the start of the meningococcal meningitis season in Africa, WHO, UNICEF and industry are in the final stages of negotiations to begin using a vaccine that should protect against a virulent form of the disease.

The vaccine is based on three strains of *Neisseria meningitidis*. Existing vaccines used in the meningitis "belt" of 21 African countries protect against the two most common of these strains, or serogroups, called A and C. The new vaccine is designed to immunize also against a third serogroup, W135, which until 2002 had appeared only sporadically in Africa, but this year caused an epidemic in Burkina Faso. Some 12 000 people were affected and 1500 were killed. At a meeting in Ouagadougou in September, African governments and others issued an urgent call for an affordable vaccine that also protects against the new W135 serogroup.

There is already a licensed W135-containing vaccine sold in industrialized countries, but it costs up to \$50 per dose. The new trivalent "ACW" vaccine is expected to be made available at about \$1 per dose, but is currently unlicensed. Until its manufacturer, GlaxoSmithKline in Belgium, obtains a licence, the vaccine can be used only for study purposes, with the approval of the regulatory authorities in the African countries that need it and in Belgium.

WHO and its partners are now preparing a protocol for studies to measure the vaccine's impact in the

event of an outbreak. Countries' own ethical review boards will then examine it.

Unless the feared epidemics fail to materialise, demand for the vaccine is almost certain to outstrip supply at first. By the time the meningitis season begins in late January, the manufacturer will be able to provide only 3 million doses, although it can scale up production during 2004. Criteria must be agreed in advance to help decide where the vaccine should be used first if several outbreaks occur, said Dr Maureen Birmingham at



Marko Korkic/IFRC

WHO's vaccines and biologicals department in Geneva.

WHO, the International Federation of the Red Cross, Médecins sans Frontières and UNICEF last week launched an appeal to donors to pay for a stockpile of meningitis drugs and vaccines for Africa. Equally important, said Birmingham, will be investment to improve the at-risk countries' surveillance and response capacity to ensure rapid detection of an epidemic, laboratory capacity to confirm it, and a rapid response mechanism to minimize the number of cases and deaths. n

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Awaiting help: one of the children affected by Burkina Faso's 2002 epidemic. Untreated, half of those infected will die

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This article opens a two-part series on polio. The first part assesses the progress of the eradication initiative in key countries. A second article in the next issue will examine the polio “endgame” and policies for when the world is declared free of wild poliovirus. Can polio immunization stop or should it continue indefinitely?

Polio: now or never

Poliovirus is down but not yet out. The last and toughest battles against this crippling disease are beginning now and the stakes are higher than ever

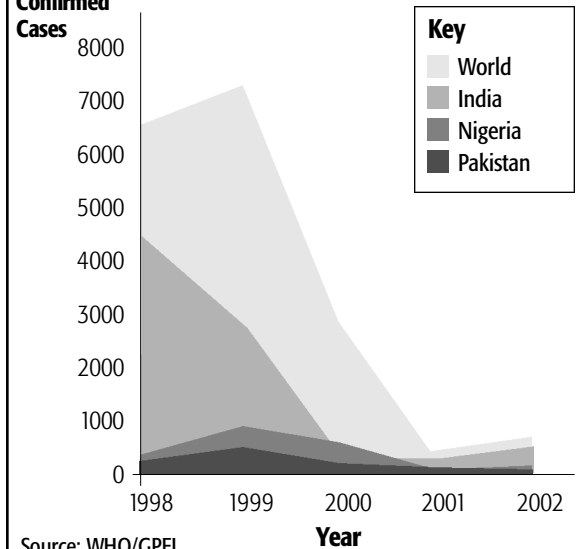
THE next few weeks are critical for the global war on polio. After 20 years of battling it out with the virus, the future will be largely determined by the outcomes of a set of house-to-house immunization campaigns taking place between now and February in India, Nigeria and Pakistan. These are the last three countries in the world where wild poliovirus is still spreading at a significant level. If the campaigns go well, the transmission of the virus could be halted worldwide in just a matter of months. If they fail, polio could start to regain its grip and the war on the virus, now so close to victory, could suffer a damaging setback.

The teams of vaccinators and their supervisors know how much is resting on their performance. “It is critical that we get it right now, and get it right in all of these places,” says Dr Bruce Aylward, coordinator at WHO in Geneva of the Global Polio Eradication Initiative (GPEI (1)), a partnership spearheaded by WHO, Rotary International, the US Centers for Disease Control, and UNICEF. “We cannot let a phenomenal opportunity slip through our fingers.”

Poliovirus has never been in such a tight corner. The number of children paralysed each year by the virus worldwide has fallen sharply - from 350 000 in 1988 to a few hundred today. The number of polio-endemic countries at the end of 2002 is lower than ever before at six, down from ten last year. And within those countries, the affected areas have shrunk, indicating that the noose around the virus’s neck is tighter than at any previous time. Three of WHO’s six regions - the Americas, the Western Pacific and, most recently, Europe - have already



Hot spots: case counts in the remaining countries with areas of high-intensity transmission of wild poliovirus
Confirmed Cases



Source: WHO/GPEI

Note: Until 2000, data were based on clinically confirmed cases. Since 2001, all cases have been virologically confirmed.

been certified free of the virus. Even countries faced with enormous logistical or political challenges, such as Bangladesh or the Democratic Republic of Congo, have had no cases of polio in 18 months. Trawl through the regularly updated case counts on the website (1) and see the columns of zeros for country after country. “All this shows that the strategies are sound,” says Aylward.

But it is proving a tough challenge to finish the job. An outbreak of polio in the Indian state of Uttar Pradesh (see Map) means that this year’s case count for India alone is double last year’s global total, while better surveillance and more intense transmission in the states of Kano and Kaduna in northern Nigeria have combined to increase the number of identified cases in 2002 there too.

The partners in the GPEI had aimed to stop all transmission of the virus by the end of this year but, clearly, at least some transmission will continue within the three key areas into 2003. The stated target of the global initiative is to declare the world free of polio in 2005. For this to be achieved, the Global Certification Commission set up by WHO requires that there should have been no cases of polio caused by wild virus in all six regions of the world for at least three years. W

Reaching every child

Aylward says that it is still possible for all six regions to be either certified or to have started the certification process by 2005. But two key tasks must be accomplished for this to be possible. The first task is to deliver top-quality immunization campaigns now in the remaining endemic areas of India, Nigeria and Pakistan so that transmission in these countries can be stopped within months. "This is about the capacity of each country's health system to work with the community to get out and reach every child and to be held accountable for doing so." The second is to continue to reach children in another small group of countries and geographic areas where polio remains, but typically with much smaller numbers of cases. These countries or areas - principally the Kandahar area in Afghanistan, eastern Angola and the Mogadishu area of Somalia - are affected by war, civil strife or other complex emergencies. Vaccinators are hampered from doing their work by obstacles such as landmines or local militia, or because what little health system there was has simply collapsed. And vital surveillance work may also be thwarted, raising the risk that cases of polio could go unnoticed and spread.

Scaling up

At the nerve centre of the GPEI at WHO in Geneva, staff keep closely abreast of the fast-changing global situation, almost like generals monitoring a battlefield. The patterns of spread of the virus in India and Nigeria are discussed in detail and the next steps agreed. For the other countries such as Afghanistan (Box 2), where polio transmission is less frequent, every individual case is tracked and discussed and laboratory data on the genetic origins of the virus are analysed. Every effort must be made to control the spread of infection, however impassable the roads, however dangerous the conditions. This is the only way to beat the virus, by reaching every single child.

Clearly, the strategy of reaching every child cannot be achieved on the cheap or in people's spare time. Since 1994 the budget for the Global Polio Eradication Initiative for each two-year period has increased more than tenfold, from \$30 million to \$350 million, and the number of staff employed worldwide has grown from about 50 to more than 2500. Since 2000, house-to-house campaigns have been conducted on a huge scale in those areas where the virus remains endemic, and overall some 10 million volunteers in developing countries have been involved. The initiative is also scaling up its surveillance activities and estimates that, on top of the \$450 million already pledged, it needs another \$275 million before 2005.

This massive investment in people and hardware, from refrigerators to vehicles, and the zealous focus on a single disease, have proved controversial in some circles. Some

1: Polio primer

- | Poliovirus is highly infectious and mainly affects children aged five and younger
- | It spreads via sewage and untreated water
- | Poliovirus causes irreversible paralysis, sometimes within just a few hours, in about 1 in every 200 people it infects, and of these up to 10% die when their respiratory muscles stop functioning
- | Polio cannot be treated; but it can be prevented with several doses of vaccine

To protect children against polio and stop the transmission of the virus, the Global Polio Eradication Initiative (1) has four "core strategies":

- | Immunization for as high as possible a percentage of infants with four doses of oral polio vaccine in the first year of life;
- | Supplementary doses of oral polio vaccine to all children under age five during National Immunization Days;
- | Surveillance for wild virus through reporting and laboratory testing of all cases of acute flaccid paralysis among children under fifteen years of age;
- | Targeted "mop-up" campaigns once wild poliovirus transmission is limited to a specific focal area

commentators have welcomed the polio approach as a model for other disease control initiatives. Others have criticized it, arguing that it has drawn time and resources away from countries' broader health system needs and their routine immunization services. This ongoing debate continues elsewhere (see page 6, this issue). But most of the polio initiative's critics agree that a job that is so close to completion must now be finished properly, and as speedily as possible.

In this context, the activities of India, Nigeria and Pakistan in tackling their remaining polio-endemic areas are crucial. These are the countries in which the lion's share of the staff and the resources are now at work, and the countries that hold the key to success. How have they progressed, and why should this winter's campaigns be so important?

Immunization Focus talked to some of those at the sharp end in each country.

Northern Nigeria: better surveillance, more training, better super vision

The campaign in northern Nigeria starts on 9 November and Dr Abdoulie Jack, team leader for the Expanded Programme on Immunization in WHO's Abuja office, is cautiously optimistic. Based on earlier campaigns in April, May and October this year, he believes that planning and supervision are now much better, with greater coordination between the partners. "We are witnessing a gradual but definite restriction of the area of poliovirus transmission," he says. "At least half of the w

"At least half of the country has been without the virus for at least a year"

Pace setter: a speedboat used to deliver vaccine to river islands in the Democratic Republic of Congo



© Sven Torfinn/WHO

country has been without the virus for at least a year.” The areas where people are still becoming infected and spreading the virus to others are now restricted to a shrinking part of the north of the country around the states of Kano and Kaduna.

But within this northern area, there has been a minor epidemic, with so far 142 cases this year compared with 56 last year. Neighbouring Niger has also seen three cases. “Our surveillance network is much better than before so we are looking more closely, and this may be partly responsible for what we are seeing,” says Jack. Dr Jules Pieters of the GPEI in Geneva, who works closely with the Nigerian EPI team, agrees. “There are more cases because surveillance has improved dramatically.” What is more, says Pieters, genetic analysis of the samples of poliovirus taken from the north show reduced variation between isolates. “This shows that the virus is under pressure.”

Equally important, Nigeria’s political leadership is now highly committed to polio eradication. “Political support is immense and has changed considerably over the past two years,” says Pieters. He believes that the shift is critical because Nigeria, rather than its international partners, is taking the lead. “The international agencies can give support but it is up to the country to get the job done, and they are doing it.” Dr Awosika, the national immunization programme manager, should take much of the credit, says Pieters.

Another improvement, says Jack, is that although resistance to immunization is still evident, it is less extensive than before. In recent years, there had been reports of whole communities in the north of Nigeria refusing to be immunized. “There were people who were

suspicious that the vaccine was a contraceptive or that it was laced with HIV.” But this year, says Jack, the vaccinating teams find only a few individual households that are still resistant. More effective advocacy explains part of this success. Also, says Jack, traditional leaders have been involved much more than before. “In the past, we did not exploit their full potential. But you cannot access communities without going through the traditional structures. This is something we have now realized and we have built it into our plans so that the traditional leaders have become an integral part of the process.” In rural areas, he says, traditional leaders have helped to ensure that communities are accessible on the national immunization days, intervening where necessary to convince reluctant households to receive the vaccine. They have also helped as guides to the vaccination teams. More women have also been recruited to work in the vaccination teams - a move that has made more households willing to open the door in the first place. “It’s not rocket science,” says Pieters. “It’s common sense.”

Uttar Pradesh, India: recovering from campaign ‘fatigue’

In a country where millions of babies are born each year, many without access to sanitation, poliovirus has plenty of places to hide out from the eradication teams. Yet much of India is now polio-free and the number of cases for the country as a whole has dropped sharply since the mid-1990s. Despite this progress, however, the northern state of Uttar Pradesh, which sits between Delhi and the border with Nepal, has a serious problem. The latest figures confirm that there have been 815 cases of polio paralysis in India this year with the vast majority in this state and, to a lesser extent, its neighbour Bihar. These figures compare with fewer than 270 cases last year in India, and fewer than 500 worldwide.

Dr Jay Wenger, Programme Manager for the Indian government’s National Polio Surveillance Project in Delhi, explains why. In western Uttar Pradesh, supplementary immunization campaigns had been missing up to 15% of children under age five. Over to the centre and east of the state, meanwhile, supplementary campaigns had not been done at all, and therefore the number of un-immunized children who had been missed by routine services had grown relatively large. When polio started to spread from the West of the state earlier this year, these children quickly became infected.

Working with their Indian government colleagues, Aylward and his team in Geneva have analysed in detail the reasons for the failure to reach all children in recent campaigns in the west of the state. Once again, although resistance to immunization has been reported, this is clearly not the main problem. Rather the failure is in the delivery of the service. “The vaccinators have not been reaching enough children, and the supervisors have not always rectified the problem,” says Aylward. W

2: Afghanistan rebuilds its health system

Despite a shattered infrastructure, the activities of local warlords and the continued presence of US Army units hunting Al-Qaeda, Afghanistan has maintained an immunization service although routine coverage is low in some districts. Anne Golaz, regional immunization advisor for UNICEF's southern Asia office in Kathmandu, recently returned from the West of the country. "People are very willing to participate in immunization and there is a lot of support for it," says Golaz. The number of local supervisors and monitors of the immunization teams has increased and the health system is gradually improving. "These guys have achieved something incredible."

Conditions are tough for the immunization teams at any time in Afghanistan, with vast areas of roadless, mountainous terrain and remote villages. Two decades of war have wrought their own havoc. Lawlessness is still a problem in places. EPI staff cars have been sprayed with bullets and held up at gunpoint. "There is no way they are not scared, they just keep going," says Golaz.

Since March, about two million refugees have returned to Afghanistan from Pakistan, and another 300 000 have

returned from Iran. Those who have been in refugee camps tend to have been immunized, but many others have been living in large cities, often with severe overcrowding and poor sanitation, and some of the infants have been missed by the immunization teams.

All known cases of polio in the country have been analysed in detail and the genetic lineages of the viruses responsible have been traced. The cases include a child of 15 months whose mother was too shy to open the door to the vaccinators and a 12-month old baby from the last and most remote village in a desert region. "The immunization coordinator said he thought the other team was doing that village; they thought he was," says Golaz. There is a case in a nomadic family who have never been immunized. There are babies who were away when the vaccinators called, because their mothers had taken them to visit other families. An immunization campaign in the valleys in December is intended to catch up with many of the mountain communities who spend the summer months in upland pastures.

Not at home

Children are simply being missed by the vaccinating teams. Houses have been marked as "done" when they have not been, and fully 40% of households in some districts have been marked by the vaccinators as containing no children under the age of five. This is implausible, given the age structure of the local population. "The kids are just out," says Dr Jonathan Veitch at the GPEI. In rural areas, babies and toddlers will often accompany their mothers to work in the fields, or in urban areas to their mother's workplace, leaving early and returning late.

Veitch helps coordinate the teams of "social mobilizers" - people who educate communities about the benefits of polio immunization and discuss people's worries with them. His data show that the households where parents are actually resisting polio immunization are very few. With those few that are resistant, the social mobilizers have had a remarkably high success rate, managing to convince almost half of them that immunization is in their interests.

Wenger believes that the vaccinators' performance and the quality of supervision can be improved relatively easily with some well-targeted training. Teams need to be reinvigorated and to understand the urgency, he says: for some of them, the problem is campaign "fatigue" after repeated national immunization days. But Wenger hopes that the sense of urgency has now been regained. In mid-

"The refugees are very keen to receive immunization; it is simply breaking down the barriers to reach these communities that is the challenge"

October the teams finished the first of four rounds of national immunization days; the remaining rounds will take place in November, January and February. "Our early results suggest that some of the changes that we have implemented have brought some improvement."

One key change has been to increase the size of the vaccinator teams from two to three, with the third member being a local person from the village or local area. "That person can say, 'There are children in this house'," says Wenger. Also, families are more likely to be convinced of the value of polio immunization if someone that they know and respect is at the door with the strangers. As in Nigeria, the teams have increased the number of women vaccinators. And they have raised the number of supervisors to one for every three teams, rather than one for every five. Just as important, the monitoring process has been improved to give more detail on the performance of the vaccinators and to improve the consistency of data between partners. "It will take some work, but if these next couple of rounds go well, it is still possible for us to finish the job by the end of 2003," says Wenger.

Pakistan: innovation, constant review and no complacency

Pakistan's successes against polio have led some to call it a model for other countries. Since 1999, numbers of cases have fallen steadily. The latest figures for 2002 show 57 cases. The polio teams have been blitzing the regions most at risk in southern Punjab and northern W

Sind, as well as the cities of Karachi and Peshawar. "Peshawar has made a fantastic turnaround," says Dr Rehan Hafiz, Pakistan's EPI manager. "Until this year, we just could not get rid of the virus, but now we have not seen a polio case there for three or four months."

Dr Anthony Mounts, who works in WHO's Pakistan office, says that efforts to beat polio in Pakistan have now been focused into highly energetic, geographically limited attacks on the areas at risk. In some of these areas the teams will have done eight campaigns by the end of the year, twice as many as the rest of the country. While eight campaigns a year is clearly not sustainable for the long term, says Mounts, as a short-term approach it appears to be bearing fruit.

Hafiz believes that one of the key successes has been a decision to bring in independent local companies or agencies to monitor the campaigns and provide rapid, real-time feedback that can even alter the quality of a campaign as it goes. Gallup Pakistan, a part of the international polling company, has been one monitor, while the University of Ayubia and a social sector agency, SoSec, have also been involved. Monitoring teams go out in the week following the campaign and spot-check areas to see whether vaccinators have been there, and whether children have been missed. If any whole village or community has been missed, the monitors go straight

back to the campaign coordinators' offices so that a team can be sent out immediately. All the monitoring data have to be returned within two weeks as a condition of the contract, so that prompt mopping-up action can be taken where necessary.

There are some unique challenges for Pakistan, including providing services to a large number of refugees from Afghanistan. "The refugees are very keen to receive immunization; it is simply breaking down the barriers to reach these communities that is the challenge," says Hafiz. But the challenge has not proved insurmountable. For example, in Karachi, where a large Afghan refugee population has developed, the team hired an Afghan woman to help them, and gained access to households more easily as a result.

Hafiz is not complacent. Pakistan's approach may be described as a model by others, but he is wary of the compliment. "It is not a perfect programme." But Hafiz does see light at the end of the tunnel now. "We can safely say now that, of about 120-odd districts, we have polio circulating in only about 30 of them. We are very, very hesitant to use the term 'polio-free'." Hesitant, for sure, but perhaps - just perhaps - now daring to hope. n

Phyllida Brown

(1) The Global Polio Eradication Initiative: www.polioeradication.org

More children, better protection - yes, but how?

SPECIAL FEATURE

As the GAVI partners prepare to meet in Dakar this month, fresh approaches to increasing immunization coverage and saving many more lives are on the agenda

OF the children born each year, only about 70% are immunized with even the basic vaccines such as DTP (a). In too many districts of too many countries, the percentage is much lower, at around 50% or less. Yet the Alliance partners have committed themselves to reaching 80% of children in all districts of at least 80% of developing countries with routine DTP by 2005. That means countries will have to immunize at least another 10 million children each year.

It is a tough challenge. But it is not the only one. In fact, even if this so-called "80/80" target is met, there is a growing recognition that countries may need a much broader set of improvements to enable them to cut child mortality and realize the full benefits of existing immunization tools. As well as increasing the

numbers of children receiving full DTP immunization, there is an urgent need to protect children more effectively against other important vaccine-preventable diseases such as measles and yellow fever. Between them, these two diseases continue to kill an estimated 800 000 people per year, and there are other killers too. Routine immunization alone may not be enough to control them.

At the same time policy-makers in countries and their international partners are looking for ways to meet an even more complex challenge: how to build immunization services into the broader and more sustainable health system that must continue well beyond the lifetime of GAVI itself.

The partners in the Alliance, such as WHO and UNICEF, have long sought ways to meet these

challenges. But later this month in Dakar, Senegal, at the GAVI Board and at the second Partners' Meeting, the issues will be high on the agenda. "This is a critical moment for raising awareness of this issue," says Michel Zaffran of WHO's vaccines and biologicals department, and WHO representative on the GAVI Working Group. Some completely fresh approaches are now being considered, including extending the partners' involvement with national health systems beyond immunization, to strive to meet wider health needs.

A bit of background. There have been several parallel debates over the best ways to protect more children, and these have often overlapped and become confused. The first is about how services W

should be delivered. There has long been a perceived split, albeit artificial and now outdated, between those who favour the so-called “vertical” approach to immunization and those who favour the so-called “horizontal” approach. Defined simplistically, the vertical approach is usually focused on a clear global target, often with international leadership, and tends to be run as a time-limited project with a top-down management. For example, the Global Polio Eradication Initiative, which since 1988 has been working zealously to rid the world of a crippling virus (see this issue, page 2), has been described by some as a relatively vertical programme.

More horizontal approaches are defined as those that aim to strengthen each country’s health system across the board, ideally by empowering countries to agree their own immunization priorities and to finance and implement them sustainably. Horizontal programmes are relatively rare but some commentators have suggested that aspects of GAVI’s work, for example its use of un-tied grants for strengthening immunization systems, favour the horizontal approach.

Of course, the “vertical” and “horizontal” are not mutually exclusive. Most commentators

believe that a programme must have aspects of both if it is to succeed; for example, using expertise in controlling specific diseases, but also in delivering integrated and sustainable services. An OECD report (1) recently concluded that both targeted and system-wide approaches must be used together to give children the best disease protection. Dr Daniel Tarantola, Director of WHO’s department of vaccines and biologicals, sums it up: “The old, somewhat outdated differentiation between vertical and horizontal programmes is not applicable; what we are aiming for is the best of both worlds.” Dr Tore Godal, executive secretary of GAVI, agrees that the two approaches can be made compatible. The important point is that people who use the health system can receive an effective and integrated service.

Avoiding conflicting goals

Meanwhile, immunization programmes in low-income countries are already working to achieve a growing list of goals to save children’s lives and improve their health. Governments have signed up to several international targets in child health and immunization. The United Nations Millennium Development Goal pledged to cut deaths in children

under five by two-thirds before 2015. The UN General Assembly Special Session on Children, in May this year, reiterated this commitment, highlighting full immunization as a key route to accelerating disease control. Its targets include ridding the world of polio, halving measles deaths and eliminating maternal and neonatal tetanus by 2005.

GAVI, meanwhile, requires countries to produce long-term national immunization plans with built-in financial sustainability. In the early months of the Alliance, there was a risk that in some countries, the GAVI demands might be seen as conflicting or competing with work on the targeted goals. In 2001, the GAVI Board was asked to put its weight behind some of these targeted goals as well as its own original targets, so that there would be no perception of competition between the various activities of national programmes (2). “This was an opportunity to try to unite the world of immunization under the GAVI umbrella,” says Dr Tracey Goodman, of the EPI team at WHO. In June 2001 in London, the GAVI Board added a new milestone to its existing ones: to declare the world free of polio by 2005. The Board also specifically agreed to redouble its own efforts to increase children’s W

1: Why do you need campaigns as well as routine immunization?

- | **Measles:** The virus is highly infectious and kills an estimated 7 70 000 children a year. Unless more than about 90% of each year’s one-year-olds are immunized, the virus steadily accumulates a “pool” of susceptible people and outbreaks of disease occur (see *Immunization Focus*, November 2000). Because the vaccine is given later than the DTP schedule, families have to make a separate visit to receive it. Many fail to return and so it difficult to maintain high coverage through the routine services. To prevent coverage from falling too low to prevent outbreaks, routine services must be supplemented with a second opportunity to receive the vaccine, sometimes called “routine campaigns”.
- | **Yellow fever:** many of the countries at risk have not routinely immunized their infants against this disease, and now, particularly in West Africa, urban outbreaks are becoming a problem, affecting adults and children

- alike. National campaigns are being done to “firefight” the virus. Routine immunization is a preferable approach and some countries are now ready to begin doing it, but it will take at least three decades before enough cohorts of infants are protected to provide population immunity. So, say WHO officials, a combination of effective campaigns in high-risk districts and regular routine infant immunization country-wide is best.
- | **Meningitis:** in the “meningitis belt” of Africa, devastating outbreaks of infection have put control of this disease high on the political agenda. Research is under way to develop vaccines that would provide longlasting protection but at present, existing vaccines have to be given at the time of each epidemic in mass campaigns.
- | **Maternal and neonatal tetanus:** the vaccine is given routinely but mass campaigns are also done in high-risk settings to help achieve the 2005 elimination goal.

Local delivery: a lay worker with basic training gives medication to a child with malaria in her village. Can immunization be built into a broader framework alongside such services?



WHO/TDR/Crump

access to immunization. Again, this year in Stockholm, the Board confirmed that “increasing access to immunization is fundamental to reaching the GAVI milestones”.

Campaigns and routine services

Meanwhile, each year, children are dying of vaccine-preventable diseases in their hundreds of thousands. Parents are demanding measles immunization for their children and outbreaks of yellow fever and meningococcal meningitis in a number of African countries have created strong demand for protection of those at risk. There is a clear need to increase the effectiveness of immunization against these diseases. Once again, however, the question of how has become a debating ground.

Routine immunization of infants is accepted by most as the essential basis for controlling most vaccine-preventable diseases. But epidemiologists now agree that, for some diseases, effective control also requires campaigns or “pulse” immunization (see Box 1). To protect the whole population against measles, yellow fever and certain other infectious agents, supplementary campaigns that reach everyone in the target group are needed. Campaigns often follow the model of the polio initiative: on special national immunization days, vaccinators, supported by teams of “social mobilizers”, go from house to house and vaccinate all children

under the age of five.

The polio initiative is a focused, time-limited effort, and can use heroic tactics and substantial resources to reach previously unreached children. For some, the approach is one that GAVI could learn from. “This is about reaching out to underserved populations, whether they are geographically isolated or living on the seventh floor of a tower block in Cairo,” says Tarantola. Dr Bruce Aylward, who heads the Global Polio Eradication Initiative, adds that the initiative has accumulated experience in forging partnerships between national and international players, and in monitoring and evaluating its work. And it has shown the true cost of reaching underserved populations.

But campaigns have their detractors too. Some argue that they are costly, unsustainable, and that they take away resources and manpower from the routine immunization services. Some accuse campaigns of being too “vertical”. In reality the evidence is mixed. Several studies have tried to assess the impact of the polio eradication initiative on routine immunization services. The polio initiative encompasses much more than campaigns, of course, including surveillance and monitoring, but its campaigns and its wider activities have been assessed more than those of other programmes to date. A report commissioned by the US Agency for International Development (3), based on a study of three countries, concluded that funds for routine immunization programmes grew during the course of polio eradication efforts. However another study, which analysed the impact of the polio approach on three countries’ health systems, reached more qualified conclusions (4). “With good planning and organization, campaigns can actually strengthen a system, but where planning and coordination are poor they can weaken it,” says Bo Stenson, one of

the study’s authors.

The debate has, however, divided those who favour campaigns and those who favour routine immunization, as if the choice is to have either one or the other. In truth, says Goodman, both routine programmes and campaigns are necessary; regular campaigns can become part of the routine, for example in controlling measles.

Health priorities - or jobs?

Part of the reason that these issues have become so inflamed is that there is an underlying - but separate - agenda of jobs and money and a ticking clock. There is a question about what to do with the “troops” who have worked for years to eradicate polio, once the virus is finally banished. Some have suggested that these individuals and the infrastructure that supports them could move, almost wholesale, into working on the newer goals of meeting the “80/80” target and accelerating the control of diseases for which outreach campaigns are needed. This way, their training and experience will be safeguarded. Others strongly object to this idea. Critics worry that the polio initiative has skewed incentives and resources away from the routine immunization programmes in some countries, with staff receiving more money and hardware for polio-related activities than for their routine immunization programme work. The critics do not see this as a sustainable structure on which to build future immunization services.

Aylward rejects the critics’ views, arguing that they are not supported by evidence. In any case, he says, polio staff will be involved in surveillance and other aspects of their existing work until around 2010 anyway. “This is about more than jobs.” He argues that the polio infrastructure - and substantial polio funding - is already being used in many ways to facilitate broader immunization goals. Godal agrees that “in many of the hardest hit W

countries, the polio staff have been helpful in facilitating GAVI'. However, he says, the approaches of the polio initiative and GAVI are obviously different. "Polio is a project and it is project-managed; GAVI is about country-led strengthening of immunization services, and so they are quite different from that point of view."

UNICEF and WHO point to a crisis in staffing for most health systems. While the goal must be to strengthen national systems, WHO and UNICEF argue that some governments will need extra staff, some of them externally funded, to meet the current set of child health goals, including those of GAVI, in the short and medium term.

Countries' needs first

Whatever the advantages or disadvantages of using the polio "troops" for future purposes, most players agree that the first question should be to ask *what* countries need to do, rather than *who* should do it. "The question of what to do about the polio infrastructure is completely separate," says Godal. The key question, he says, is what do countries actually need to meet broad and sustainable national goals for immunization within their health systems? Once that has been answered, and the funding and capacity needs have been broadly mapped, then will be the time to work out how it should be done. "We are not an employment agency; our concern is that countries secure adequate staff to deliver vaccines for their children." However, everyone agrees that the issues need to be resolved very quickly.

So now the Alliance is trying to move forward, aware that each year of delay means another unacceptably high loss of life.

Fresh start

One approach, spearheaded by individuals in WHO, UNICEF and the Children's Vaccine Program at PATH, has been explored as a means to support countries in increasing access to immunization at district level upwards. Dr Julian Bilous at WHO, Dr Jean-Marie Okwo Bele at UNICEF and others in this group have suggested adopting a district strategy for assessing needs, problem solving, planning, budgeting and implementation. Immunization microplans, backed by adequate funding, would be developed. Five critical strategies that are considered common to both immunization and other primary health services would be adopted, including regular outreach for disadvantaged communities, supervision, monitoring and better planning and use of resources.

Okwo Bele, senior adviser and team leader on immunization at UNICEF, emphasizes the need to meet countries' individual needs. "We cannot have a one-size-fits-all approach," he says. He believes teams need to work at district level to identify the specific barriers to reaching more children, and enable district staff to overcome them.

The GAVI Board is now discussing this proposal and the possibility of including it in a wider approach. It is considering bringing in outside analysts to take an entirely fresh look at what countries' health systems need to increase

access to immunization, but in the broader context of the health system. Aware of the urgency, the Secretariat has proposed a 4-month study by management consultants, with input from WHO, UNICEF and other partners, and the Secretariat itself, in providing data and stakeholder views. The study would analyse needs and propose a set of scenarios for achieving the "80/80" target, ranging from a centralized and vertical push to achieve higher DTP coverage to a much more broadly integrated set of services, nested within the wider mother-and-child health system, and potentially covering anything from immunization to malaria treatment to vitamin A supplementation. Finally, with feedback from the stakeholders on each scenario, the management and resource requirements for preferred options would be assessed and detailed planning could begin.

No decisions have yet been taken. But the partners are hopeful. "This is a fresh look," says Tarantola. Now, the emphasis is on answers - and funds to back them - soon. **n**

Phyllida Brown

(a) Diphtheria-tetanus-pertussis. Three doses of DTP ("DTP3") has been used as an indicator of coverage in GAVI-supported countries.

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Editor: Phyllida Brown

GAVI Editorial Adviser: Lisa Jacobs

Publisher: Dr Tore Godal, GAVI Secretariat, C/O UNICEF, Palais des Nations, 1211 Geneva 10, Switzerland. Email: Gavi@unicef.org

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