

# Immunization Focus

A quarterly publication of the Global Alliance for Vaccines and Immunization

www.VaccineAlliance.org

## GAVI

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

### Partners represented on the GAVI Board:

#### Nongovernmental organizations

**The Bill & Melinda Gates Foundation**

#### National Governments

**Research and Technical Health Institutes**

#### Foundations

**The United Nations Children's Fund (UNICEF)**

**The Vaccine Industry**

**The World Bank**

**The World Health Organization**

## Immunization Focus

*Immunization Focus* is issued quarterly on the GAVI website at [www.VaccineAlliance.org](http://www.VaccineAlliance.org). It is intended to provide updates and topical debate about key immunization issues at national and international level. It can also be sent to you by email.

To receive a free email copy, please send an email message to [majordomo@who.int](mailto:majordomo@who.int), with «subscribe gavi» in the first line of your message. If you do not have web access, paper copies of *Immunization Focus*, downloaded and printed from the web, can be obtained from your national UNICEF or WHO office.

Letters to the editor are welcome: please write via the GAVI Secretariat, c/o UNICEF, Palais des Nations, 1211 Geneva 10, Switzerland, or [Gavi@unicef.org](mailto:Gavi@unicef.org)

## NEWS

# Spending is up, but the finance gap is unfilled

GOVERNMENTS in low-income countries have significantly increased their own spending on immunization in the era of GAVI, says a report by the Financing Task Force (FTF). But although this increase is encouraging, future financing is vulnerable, particularly once the current support from the Vaccine Fund ends in three to five years' time. An analysis of the first eight countries whose financial sustainability plans are complete shows that they will need a total of \$98 million per year, of which only \$34 million (or 35%) is currently secured. The report says that "concerted and specific" actions by governments and each development partner are essential if improvements in immunization are to be sustained.

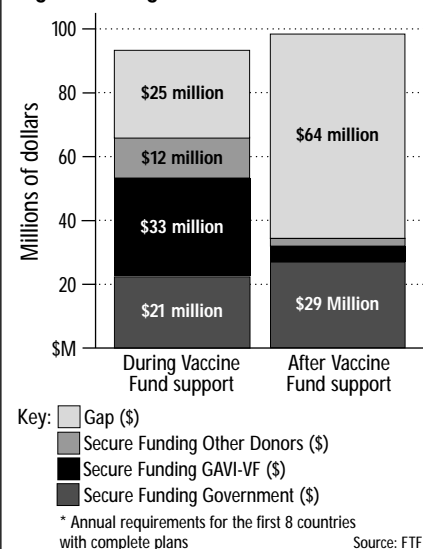
The FTF analysed complete data from Cambodia, Cote d'Ivoire, Ghana, Guyana, Kenya, the Lao PDR, Mali, and Rwanda. The early findings will be presented to the GAVI Board this month.

"The countries are beginning to work on filling the finance gap," says Steve Landry, co-chair of the FTF. "Now their action has to be matched by all the partners working together." Spending by the governments of the countries themselves has grown by about \$4 million in aggregate, or 33%, compared with the pre-GAVI era. Some partners have also increased their support. Aggregate spending on immunization across the countries has increased from \$34 million to \$62 million, of which \$15 million came from the Vaccine Fund, \$7 million from multilateral and bilateral partners and the remainder from other sources. But, says the report, despite progress towards adequate and predictable funding, "managing the transition of financial responsibility from the Vaccine Fund to governments and their partners

will be complex and is in no way assured at the present time".

Tore Godal, Executive Secretary of GAVI, says the success of GAVI depends largely on the partners' ability to tackle this major financing challenge. "This is not going to work if everyone looks at each other; each partner has to work out what it can do to help."

**Figure 1: Programme resource needs\***



Although the financing gap may seem daunting, the absolute amounts of money involved are small compared with other global health initiatives or government health spending. On average across the countries, immunization programmes accounted for only 3.2% of total health expenditures and less than 0.2% of GDP.

Ruth Levine, who at the World Bank worked with GAVI on financial sustainability, says the increased spending will bring lasting health gains. "Countries are taking a major step to reduce disease burden, using some of the most cost-effective interventions available." ■

### Inside this issue

#### The Vaccine Fund's challenge

GAVI's fundraising arm has made a good start, but there is a lot of work ahead

2

#### Vaccine vial monitors: is the waiting almost over?

A simple device could protect children and save millions of dollars' worth of wasted vaccines

4

#### In the hot seat: the view from the health ministry

Four ministers describe the key challenges they face in improving their countries' immunization services

6

# The Vaccine Fund's challenge

**GAVI's fundraising arm has made a good start, but there is a lot of work ahead**

WHEN GAVI and its financing arm, the Vaccine Fund, were born in 2000, their launch generated excitement and media coverage across the world. The Vaccine Fund was a new concept, and the generous gift it received from the Bill & Melinda Gates Foundation was on a scale unprecedented in public health. Three and a half years later, the excitement has been maintained, but there is also a growing recognition that raising new money may be more challenging than many expected. The Vaccine Fund now faces a substantial gap between its current income and the amount it needs to deliver the Alliance's longer term vision.

The early successes of the Alliance have been achieved at a brisk pace. By mid-2003, GAVI and the Vaccine Fund had committed almost \$1 billion to countries over five years, for the purchase of new vaccines and to support improvements in immunization services and safety (1). By the end of 2002, an additional 10 million children had been newly protected against hepatitis B virus. Eleven countries have now been approved to receive Hib vaccination by 2004, newly protecting some 4 million children. Immunization has been raised back up the political agenda. What is more, the approach pioneered by GAVI and the Vaccine Fund – which gives countries maximum control over resources, stresses accountability and rewards good performance – is now being adopted by others outside the immunization field, such as the Global Fund to fight AIDS, TB and Malaria.

## 6 The challenge for the foreseeable future is to close a funding gap of \$150 million a year 9

But if the Alliance is to deliver sustained improvements in immunization, the Vaccine Fund needs to dramatically increase its annual income (2). It has enough to meet its current commitments but needs much more. Plans for the mid-term future are currently being explored with countries and the partners to agree priorities and cost them.

Since the initial gift of \$750 million from the Bill & Melinda Gates Foundation in 2000, nine industrialized countries have committed another \$350 million in total. However, the Fund's President and CEO, Jacques-François Martin, says he needs to raise \$400 million each year to fulfil GAVI's broad plans.

Another way to look at this is to view the Fund's income in annual terms. So far, its annual income has been around \$250 million – with \$150 million a year for five years from the original Gates Foundation gift, and about \$100 million a year so far from governments. Alex Palacios, who joined the Vaccine Fund earlier this year from UNICEF to head up the

resource mobilization effort, says the income achieved so far is impressive. "I think it is unusual for a start-up to produce as much as we have," he says. "But the Vaccine Fund's challenge for the foreseeable future is to close a gap of \$150 million a year. We have to reach a level of \$400 million a year if we are going to achieve what we set out to do."

In the longer term, the funding gap is growing greater. From about 2007 the requirements will increase as new vaccines come on stream and by 2011, the Vaccine Fund will need to raise about \$1 billion a year to enable the Alliance to achieve its goals. 2011 is not far away.

The size of the funding gap may come as a surprise to politicians who had been lulled into believing that the generous initial Gates gift would somehow last forever. Yet, as Palacios stresses, the \$1.1 billion raised so far is "an important down-payment, not the full mortgage". Immunization is one of the most cost-effective health interventions available, but it is not free. It costs about \$30 to fully protect each child for life with the six "basic" vaccines (DTP, measles, polio and BCG) and two under-used vaccines, Hepatitis B and Hib. And, each year in the low-income countries eligible for GAVI support, there are almost 90 million new infants to immunize.

Although a large part of the Vaccine Fund's money has been spent on buying newer vaccines, GAVI policy is to improve countries' broader immunization services in a sustainable way and, under the current plans of the Alliance, strengthening these services is a one of the key priorities for the longer term. The estimated requirements over the next few years include more money to increase coverage to 80%, in line with GAVI goals, to improve immunization safety and to build up the capacity of national immunization teams. Also on the tab is the cost of work to accelerate the development of additional vaccines against two major killers, rotavirus and pneumococcus.

Jacques-François Martin acknowledges that it has been more difficult than expected to find new donors to contribute. "I think it is clear that we all underestimated the difficulties that we would face when we started," he says. In general, the Vaccine Fund's mission is well received among potential donors, he says; few argue with the basic principle that immunization is a comparatively straightforward, cost-effective way to save lives. "But in order to translate sympathy into hard cash, we have to overcome some problems." One is the mistaken perception of some governments that the initial gift of the Gates Foundation was big enough to let everyone else relax. "We have not communicated clearly enough that Gates challenged ▶

Philippe Blanc/WHO



the world to match this initial contribution,” he says. Also, he says, some countries delayed contributing to the Fund, particularly in Europe, because they did not feel involved in the initial formation of the Alliance. Gradually, these attitudes are changing and there is an increased sense of ownership of the GAVI initiative, says Martin, but the process takes time. In the case of one industrialized country, representatives of nine different ministries and national political bodies held a total of more than 40 meetings with the

Fund before the government agreed to commit money.

Since 2000, also, economic conditions have deteriorated, while other global health initiatives have been launched, some with a higher profile than GAVI and the Vaccine Fund. Everyone is competing for limited resources. “We need to increase our political visibility,” says Martin.

**“ We need to capitalise on our extraordinary start. We don’t normally get such an opportunity ”**

Palacios is upbeat. “When I came here I was impressed by what has been achieved so far,” he says. “I had expected that there would be much more initial groundbreaking to be done but the fact is, it has already been done. This organization has been in existence for only a bit over three years, and we have had to live with an extraordinary period in history.” After the terrorist attacks of September 11, many people did not travel for months, reducing the opportunities to network. War, the threat of bioterrorist attack, and even the media obsession with severe acute respiratory syndrome (SARS) have kept children’s immunization off the political radar for longer than expected. But now is the time to act. “We need to capitalize on our rather extraordinary start. We don’t normally get such an opportunity.”

Several changes have been made. The staff of the Fund is to increase from just a dozen to about 20, with more individuals dedicated to full-time fundraising. And there will be an increased emphasis on communicating the achievements of countries supported by GAVI and the Fund, in order to attract new donors. Both Martin and Palacios believe that more sceptical donor governments need to see hard data that demonstrate the positive impact of the Alliance. Those data are starting to emerge. For example, says Palacios, Uganda has reportedly increased its immunization coverage by 10% in a year. “I believe that there are number of governments that have been taking a close look at the information we provide, and that they will soon join the mix,” says Palacios.

He argues the case for immunization as a practicable way to help halve child deaths, as governments have pledged to do as part of the Millennium Development Goals. Thanks to the basic foundation laid by the Expanded Programme on Immunization, vaccines already save about 3 million lives a year. If existing vaccines reached more children, another 2 million lives could be saved. With the development of the newer vaccines against major killers such as rotavirus and pneumococcus, yet another 2 to 3 million lives could be saved. “That’s half of the 10 million child deaths,” says Palacios.

The Vaccine Fund is also exploring new types of donors. Palacios wants to build better relationships with nongovernmental organizations and advocacy groups. “For example, I think it is very important to make sure that Oxfam understands that this is an effort that they are also involved in.” Martin also describes ideas for attracting new private-sector donors, and simple donation schemes that would strengthen solidarity between vaccine users in the rich countries and their peers in poorer countries.

In the longer term, more innovative financing mechanisms are being explored. One idea is that the Fund could “buy down” loans made to a country by the International Development Association (IDA), the World Bank’s soft-loan arm, on completion of a specific immunization goal. Because the loans are effectively zero interest, each \$1 spent would unlock at least \$2.50, maximizing the efficiency of donor support. This approach has already been used to pay for polio vaccine (3). Martin says the Vaccine Fund is also exploring various mechanisms involving the financial markets, and the options for the Fund itself to borrow money. “But it is very early days,” he says.

The Fund’s aim has always been to catalyse funding from other sources, and GAVI’s policy is to encourage governments and their partners to take over responsibility for financing their own immunization services at the end of the Fund’s support. But, says Martin, the Fund’s support for specific activities will not stop suddenly; rather, it will be tailed off gradually over several years. By the time this happens, new sources of funding for immunization must be in place: the challenge is to build close partnerships with those new sources now. ■

Phyllida Brown

**Further reading**

1. See [http://www.vaccinealliance.org/home/Support\\_to\\_Country/Country\\_Status/index.php](http://www.vaccinealliance.org/home/Support_to_Country/Country_Status/index.php)
2. Vaccine Fund Strategic Plan 2002-2006. Available from the Vaccine Fund [www.vaccinefund.org](http://www.vaccinefund.org)
3. World Bank news release April 29 2003 (2003/304/S) at [www.worldbank.org](http://www.worldbank.org) <<http://www.worldbank.org/>>





# Vaccine vial monitors – is the waiting almost over?

**A simple device could protect children from receiving heat-damaged vaccine and save millions of dollars' worth of wasted vials. Phyllida Brown investigates**

EVERY year, millions of doses of vaccines are thrown away for fear that they might have been heat-damaged, whether or not they actually are. Heat damage is not visible, so health workers have been trained to discard anything that they suspect could have been exposed, for example after two trips out to the field. More serious still, where failures in the cold chain go unnoticed, children are probably receiving heat-damaged vaccines that offer no protection.

But these problems are largely avoidable. Since 1996, a tool called a vaccine vial monitor (VVM) has been available. A VVM is a label that contains a heat-sensitive material. It is placed on a vaccine vial, where it registers heat exposure over time, for example if an ice pack melts, or if a fridge suffers a short power cut. As time passes, the colour darkens. The warmer the temperature, the faster the colour changes. The label shows clearly when the cumulative heat exposure has reached the point where the vaccine should be discarded (see Figure 1). As long as the vaccine has not reached the discard point, and has not reached its expiry date, it can be used even if it has been out of a fridge several times (see "How does it work?", Box 1).

**Figure 1: How to read a vaccine vial monitor** Source: WHO

	✓	The inner square is lighter than outer circle. If the expiry date has not passed, <b>USE</b> the vaccine.
	✓	As time passes the inner square is still lighter than the outer circle. If the expiry date has not passed, <b>USE</b> the vaccine.
	✗	<b>Discard point:</b> the colour of the inner square matches that of the outer circle. <b>DO NOT</b> use the vaccine.
	✗	Beyond the discard point: inner square is darker than the outer circle. <b>DO NOT</b> use the vaccine.

"Used properly, this can be a miracle tool to reduce wastage and prevent the use of heat-damaged stock," says Ümit Kartoglu of WHO's department of Vaccines and Biologicals. In Bhutan, a study showed that wastage fell by 49% on polio vaccine where VVMs were used (1). Comparable results have emerged from studies in Nepal, Turkey, Ghana, Kenya, Sudan, Tanzania and Vietnam. The benefits are greatest during national immunization days, when large volumes of vaccine are transported into the community, but VVMs can also cut wastage in routine programmes, especially in remote rural areas where teams must travel far from base to reach children. The technology is inexpensive, with each VVM adding

only a few cents to the cost of a vial and bringing net savings. UNICEF and WHO have estimated that, given typical wastage rates, the use of VVMs on the basic vaccines alone could save about \$5 million a year (2). With the introduction of more expensive vaccines such as Hib and yellow fever, the savings will be orders of magnitude greater.

Because VVMs can show up undetected failures in the cold chain, they may initially increase the number of vials that are rejected. But by identifying those failures, they will protect children and ultimately improve the quality of the cold chain as well.

## 1: How does it work?

The VVM is a coloured circle with a pale square in its centre. It can be printed on a label or attached to the cap of a vaccine vial, or the neck of an ampoule. The square gradually darkens until it matches the surrounding circle. At the point where the inner square matches the surrounding circle, the vaccine has reached its discard point.

The colour change is due to a chemical reaction known as polymerization. With heat and time, the initial agent, a monomer, is converted irreversibly to a polymer. The chemical reaction speeds up when the temperature is raised. As different types of vaccines have different levels of heat sensitivity, VVMs come in four types whose rates of colour change at specific temperatures have been designed to reflect these different heat sensitivities. The type of VVM that is attached to a particular vaccine is the type appropriate for that vaccine's heat stability. For example, VVM2 is designed for oral polio vaccine, the least heat-stable of the vaccines used in the Expanded Programme on Immunization, which reaches its discard point after two days at 37°C. At the other end of the spectrum, VVM30 is suitable for certain types of hepatitis B vaccine, which are relatively heat-stable and survive undamaged up to 30 days at 37°C.

A VVM does not measure the potency of a vaccine, but simply its heat exposure. Heat exposure is one of the main factors that can affect vaccine potency. VVMs do not provide information about whether a vaccine has been frozen, another potential source of damage, especially for hepatitis B.

So why don't all vaccines carry a VVM? Only and polio vaccine, the most heat-sensitive of the vaccines used by the Expanded Programme on Immunization, has carried VVMs since 1996. Even though UNICEF and WHO have requested manufacturers to supply VVMs with all vaccines since 1999, and included VVMs in the minimum requirements for UNICEF tenders since 2000, VVMs are still only available from a minority of the 23 manufacturers that supply vaccines to the UN agencies. They appear on some, ▶



but not all, vials of BCG, yellow fever, measles, hepatitis B and tetanus-toxoid vaccines. Some multivalent vaccines also carry VVMs, including measles-rubella, measles-mumps-rubella and DTP-Hib liquid vaccine (3).

At its meeting in Dakar in November 2002, the GAVI Board resolved that all vaccines purchased by the Vaccine Fund will include VVMs after 2003. When the Board meets this month, its vaccine industry members will provide an update to the other members on action taken by industry to meet this requirement.

WHO, UNICEF and the other members of the Alliance are working with the industry and hopeful that consensus is gradually being achieved. At present, manufacturers hold differing positions on VVMs. Some, such as Chiron in Italy, Japan BCG, Green Cross Vaccine Corporation, LGLS and the Institut Pasteur in Dakar, Senegal, have

introduced them for products sold to UNICEF. Other manufacturers have clear plans to introduce them. For example, says Walter Vandersmissen at GlaxoSmithKline in Belgium, the company's tetravalent vaccine DTP+HepB is expected to carry VVMs later this year, while its pentavalent DTP+HepB+Hib should follow early in 2004. The Serum Institute of India has been validating VVMs on its products but, says Suresh Sakharam Jadhav at SII, this process is now almost complete and staged introduction of VVMs will begin in January 2004.

Aventis Pasteur added VVMs to its oral polio vaccine in 1996 and says it recognizes the tool's benefits for highly heat-sensitive vaccine. But it says it has "reservations" about using VVMs systematically on all vaccines for developing countries, and it has not yet put them on any of its other relevant products. Nonetheless, Aventis Pasteur says it has evaluated the feasibility of expanding the use of VVMs to three of its products: DTP-Hib, yellow fever and measles vaccines. "Aventis Pasteur has targeted the end of 2003 to complete the feasibility evaluation, at which time it hopes to have the ability to respond to the special needs of GAVI," says the company.

Some manufacturers have expressed doubts about the technical accuracy of VVMs and their validation. But VVMs are validated rigorously, both in the laboratories of both the VVM manufacturer, LifeLines in New Jersey, USA, and the laboratories of vaccine manufacturers that currently use them. Each batch is tested by exposure to heat in water baths and using a colour reflectance densitometer, to ensure that the VVM changes colour correctly in response to heat exposure. Vaccine manufacturers also conduct tests before accepting each shipment from the VVM manufacturer. WHO has also commissioned various independent laboratory tests, for example at the UK National Institute for Biological Standards and

Control, to compare these results with those of the manufacturers. "We have shared the results of these studies with all industry members, and none of them raised any questions," says Kartoglu.

Still, some in the industry fear that manufacturers could be held liable for products bearing "healthy" VVMs that were later blamed for adverse events. However, says Kartoglu, concerns about liability are nothing new. All vaccine manufacturers risk being held liable for adverse events attributed to their products, and VVMs do not change this. If anything, a VVM should reduce the risk that a manufacturer will be held liable for adverse events, because heat-damaged products are less likely to be used. The risk that a VVM will fail in the field is only theoretical, says Kartoglu: it is a validated device that is checked, lot by lot, by the producer. Manufacturers that use VVMs already perform regular audits on the producer. And, just like any other material used in a vaccine production line, the vaccine manufacturer checks every lot as part of its acceptance process. In six years of use, with more than 800 million vials of vaccine bearing VVMs, there has been no documented case of a child receiving heat-damaged vaccine due to a faulty VVM.

For some vaccine manufacturers, the strongest objections are not technical but logistic or economic. Aventis Pasteur told *Immunization Focus* that its reservations about universal use of VVMs for developing countries include the size of the investment relative to the expected returns, and concerns that there is currently only one manufacturer of VVMs. Aventis Pasteur also has concerns about how to manage its own inventory, given that VVMs are required only on vaccines supplied through UNICEF, and not currently on vaccines supplied through the Pan American Health Organization (PAHO).

#### Firm contracts for vaccines

Vandersmissen at GSK says the company may lose flexibility in the use of its filling-line capacity if it has to add VVMs to some vaccines. He says that manufacturers would be encouraged to devote space and capacity to VVM-bearing products if they had firm contracts from public-sector vaccine buyers to purchase a given quantity of vaccine. At present, only a "gentleman's agreement" is in place until the vaccines are bought, and this uncertainty makes manufacturers wary of risking wasted capacity.

Some manufacturers are reluctant to introduce a new technology that they believe will need to clear yet further regulatory hurdles. WHO says it is the responsibility of the individual manufacturer to contact their national regulatory authority about any approval it may need for VVMs. However, WHO has already taken steps to find out the position in some countries, and will continue informally to work with national regulatory authorities on this issue. France and Belgium have told WHO that VVMs do not require regulatory approval from their national

authorities. In the US, for vaccines licensed for distribution in the US, manufacturers would need a supplement to their licence application, and vaccines not licensed for US distribution have to meet export regulations. However, these are not seen by WHO as difficult to achieve.

UNICEF, as a key public-sector buyer of vaccines, is responsible for sending clear messages about VVMs to its suppliers. "We are working with all manufacturers to ensure the implementation of VVMs at the earliest opportunity," says Shanelle Hall at UNICEF Supply Division. She points out that because there are so few suppliers of certain vaccines, UNICEF does not always have a choice; to ensure enough doses are bought, UNICEF must sometimes buy vaccines without VVMs at present. "But by having VVMs as part of the technical specification for vaccines, and through continuous communication with manufacturers, we are building up the number of vaccines we receive with VVMs." Hall points out that it would help if all buyers also required VVMs. Steps are being taken towards

introducing VVMs in the PAHO region. Programme managers from PAHO countries will meet in Peru later this year to discuss the options.

Mercy Ahun, formerly the manager of Ghana's national immunization programme, and now with the GAVI Secretariat, is clear. "VVMs are currently one of the best contributions that vaccine manufacturers can make to the lives of children". ■

**References**

- (1) Vaccine Vial Monitor Impact Study Results. Kingdom of Bhutan. July 1997 through November 1998. Program for Appropriate Technology in Health, Seattle, 1999.
- (2) Quality of the cold chain. WHO-UNICEF policy statement on the use of vaccine vial monitors in immunization services. WHO/V&B/99.18
- (3) United Nations Prequalified Vaccines (June 2003). [www.who.int/vaccines-access/quality/un\\_prequalified/prequalvaccinesproducers.html](http://www.who.int/vaccines-access/quality/un_prequalified/prequalvaccinesproducers.html)

**Further reading**

Getting started with vaccine vial monitors. WHO, 2002. WHO/V&B/02.35

## In the hot seat: the view from the health ministry

Last November in Dakar, Senegal, at the GAVI Partners' Meeting, health ministers expressed a desire to see a forum for exchange of experiences and information on immunization. Here, we begin by asking four health ministers to describe the key challenges and issues they currently face

**ANNA M. ABDALLA,**  
MINISTER OF HEALTH, TANZANIA



Lisa Jacobs

"It all starts with political commitment. Even a poor man has priorities. We made a commitment to the people of our country at the time of independence that the government would prioritize fighting diseases. In Swahili we say, "Kinga ni bora kuliko tiba", which means, prevention is better than a cure. That is why immunization is such an important part of our health programme

We have found it is very easy to work with NGOs. In fact we are working very closely with private providers of health services – especially mission hospitals and clinics. We have a programme in which we give 'bed-grants' to help pay for personnel costs. We contract with not-for-profit organizations to provide essential services such as immunization.

We just launched a programme to combine immunization with malaria prevention. We bought one million insecticide treated nets and we give them to mothers when they bring their children in for their third dose of DTP. And we give them out when we do polio house-to-house campaigns for National Immunization Days.

When there have been negative rumours about immunization we have been able to turn around attitudes by working in districts to mobilize community leaders, including traditional healers, to spread the facts about immunization.

One challenge is that in some local governments they do not appreciate what primary health care is about. So we are looking to reform the system so that at the local level there is stronger commitment to primary health care."

**LESLIE RAMSAMMY,**  
MINISTER OF HEALTH, GUYANA

"The challenge of buying the vaccines themselves is now being met, through GAVI's assistance and our own increasing investment. What we need now is to develop the capacity to deliver them. Like many developing countries, this is currently our biggest challenge. We need to address several issues.

First, the cold chain. Electricity is not available for many of our hinterland communities. With the help of GAVI and the Pan American Health Organization, PAHO, Guyana has completed a survey of its cold chain. We are addressing the problems, but we will need help. Building a better cold chain has become a priority for us, along with the need for central refrigerated storage facilities.

A second issue is human resources. To have proper coverage, you need a well trained, and fairly large, staff. But we are training people and losing them to the rich countries. We must confront this. Our entry requirements for the health sector are very rigid, and we may have to change them. People in our communities may be able to participate in delivering healthcare even if it means breaking some well established rules. Some

workers in an immunization programme need not be trained nurses.

A third issue is to convince parents of the benefits of immunization. We haven't done enough to show them the dangers of vaccine-preventable diseases. I am building community partnerships, producing magazines showing people what these diseases can look like, and working with doctors.

And finally, the government still needs to commit more money to immunization. Remember, GAVI's support covers only a part of our national programme. It's a cash-strapped country. We need to sensitise people at all political levels to the dangers of preventable diseases that can return at any time."

**MARIN KVATERNIK**

**MINISTER, REPUBLIC OF SRPSKA MINISTRY OF HEALTH AND SOCIAL WELFARE, BOSNIA & HERZEGOVINA**

Right now the biggest challenge we face is the effects of the extensive health reforms we have been undergoing in Bosnia and Herzegovina (BiH). Currently, we have two ministries of health, one that serves the Republic of Srpska and another that serves the BiH Federation, and they have different organizational structures. As civil administration is reformed, these problems will diminish.

The first reform affected primary health care. Before the conflict in our country in the 1990s, under the public health insurance system, patients were allowed to go directly to specialists. Now they must first go to a 'gatekeeper' – a family medicine physician. Since this has affected the specialists' practices, some medical professional associations have opposed this, drawing resources away from serving the public to dealing with conflicts.

Now we are in the second phase of reforms – modifying the health insurance

fund, developing a master plan for hospital reform and reorganizing the ministry of health itself. We face classical management problems, such as managing consultants. After the conflict we had 150 agencies offering advice to the health ministry. Now we have 20 separate national coordinators for specific health issues – immunization, TB, HIV, diabetes, cardiovascular, reproductive health, tobacco, and so on. We will be modifying this system so that coordinators are accountable and responsible for advising the ministry.

The good news is that we are on the right track to making the system run more smoothly.

**PAGBAJABYN NYMADAWA,**  
**MINISTER OF HEALTH, MONGOLIA**



Vaccine Fund

"Reaching the unreached children in our country presents us with some tough physical challenges. First, Mongolia is very large, but sparsely populated. Its surface area is more than 1.5 million square km, (almost as big as France, Germany, Spain, Portugal, Belgium and the Netherlands combined) with a population of only about 2.5 million. This means on average that every square kilometre has about 1.5 people on it. The climate is also harsh. Much of the country is at high altitude and temperatures vary between -40° C and 25° C. But vaccines must still be given to babies at the right times, kept cool in summer and not

frozen in winter. Our immunization services are relatively costly to run.

In fact, our immunization history is good. We eliminated smallpox in 1939, four decades before the world as a whole. We also have relatively high immunization coverage for the vaccines available under the Expanded Programme of Immunization, at 90%. We introduced hepatitis B vaccine back in 1991, despite economic difficulties, and in that time we have protected more than 300,000 children from contracting the disease.

We are a low-income country. We used to receive support from the former communist countries. After that era ended, we had two or three very difficult years when the vaccines didn't arrive. From 1995 to 2000, we had a lot of support from Japan, including all vaccines and some training. Mongolia's policy is to invest in preventive medicine, and we have been successful – for example, during the diphtheria outbreak in the Russian Federation during the 1990s, we remained unaffected. We need more sophisticated hospitals, but instead we try to spend government money on disease prevention. We now have an immunization law which has articulated the government's responsibility to vaccinate all children. However, we need more resources to reach nomadic children and to switch to combination DTP+HepB vaccine. This would save us 150,000 unnecessary injections every year and the same number of visits to nomadic families. We have applied to GAVI and the Vaccine Fund for support for this project, but because our national coverage and performance is relatively good, we get less support than some countries with lower coverage rates. I think good performance should be rewarded." ■

Interviews conducted by Lisa Jacobs and Phyllida Brown

**Immunization Focus**

**Editor:** Phyllida Brown

**GAVI Editorial Advisor:** Lisa Jacobs

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

**External Editorial Board:**

**Shawn Gilchrist**, Vaccine Industry Representative, Aventis Pasteur, Toronto; **Keith Klugman**, Emory University, Atlanta, United States; **P. Helena Mäkelä**, National Public Health Institute, Finland; **Philip Minor**, National Institute for Biological Standards and Control, United Kingdom; **Khadija Msambichaka**, Zimbabwe; **Francis Nkrumah**, Noguchi Memorial Institute for Medical Research, Ghana; **Paul Offit**, The Children's Hospital of Philadelphia, United States and Member, Advisory Committee on Immunization Practices; **Mohammed Ashraf Uddin**, Chief Health Officer, Dhaka City Corporation, Bangladesh

The views expressed in *Immunization Focus* are not necessarily the views of the GAVI Board.

**Designed and produced by:** Topics the Creative Partnership, 397 Topsham Road, Exeter, EX2 6HD UK Tel: +44 1392 876800 email: topics@eclipse.co.uk