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IN CONVERSATION

“Communities and Researchers Should Grow Together”

An interview with Elise Levendal

Elise Levendal is a registered chief professional nurse with a special interest in nursing and health education. She was previously Western Cape Regional Coordinator of the National Progressive Primary Health Care Network (NPPHCN) and later joined the Progressive Primary Health Care (PPHC) Centre for Learning, in her role as Executive Director. Elise is currently the Interim Co-Director (Business Affairs and Administration) of the Medical Research Council's (MRC), South African AIDS Vaccine Initiative (SAAVI). She is also the Programme Manager for the Masikubulisane SAAVI Community Involvement Programme. Sankalp spoke to her during her recent visit to the IAVI India office about her work in South Africa.



Elise Levendal

How has the government supported and facilitated AIDS vaccine trials in South Africa?

The South African government coordinated and developed the HIV/AIDS/STD Strategic Plan for South Africa 2000-2005. Goal Ten of the plan is dedicated to the development of

AIDS vaccines. It is this vision which led to the establishment of SAAVI (South Africa AIDS Vaccine Initiative) in 1999 to coordinate the development and testing of AIDS vaccines in South Africa.

SAAVI's aim is to produce an affordable, effective and locally-relevant AIDS vaccine.

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SPOTLIGHT

Fast Forward

The Union Health Minister's commitment to set up an independent drug regulatory authority in the country has injected a new vibrancy in the areas of research, clinical trials and development of drugs in disease areas of national priority

The Indian government has proposed the setting up of a new independent drug regulatory authority, to be called the Central Drug Administration or the National Drug Authority, on the lines of the US Food and Drug Administration (FDA). India's Minister of Health and Family Welfare, Dr Anbumani

Ramadoss, met with the FDA to discuss this issue during his visit to the US in June 2005.

The authority will most likely be composed of around 10 departments each overseeing different aspects like drug safety, drug law

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The government funds AIDS vaccine development including vaccine trial work through monies received from the Department of Health (DoH) and the Department of Science and Technology (DST). Furthermore the Medicines Control Council (MCC - the South African regulatory body) is involved in reviewing and, where applicable, approving protocols for AIDS vaccine clinical trials as well as the quality assurance of such trials through inspections at trial sites by MCC.

In terms of community involvement, relationships have been built with DST, resulting in representation at our recent AIDS Vaccine Educator Forum and at National Community Advisory Board Forum meetings, including relevant presentations by DoH representatives on community involvement and where community advisory boards (CABs) fit into the national health structures.

What is then the way forward for AIDS vaccine trials in South Africa?

South Africa will continue to test vaccine candidates from international sponsors such as IAVI, Merck, HVTN and others. SAAVI co-funds these clinical trials by providing infrastructure at the clinical trial sites.

Could you elaborate on the Draft Charter of Rights for Volunteers?

The draft Participant Charter of Rights is unique in that it draws attention to the human rights issues in AIDS vaccine development within the context of the struggle for and entrenchment of human rights in the Constitution of South Africa. It has been developed in collaboration with trial site fora and communities. However, it is still a draft that requires further consultation.

The draft charter includes the right to access health care services. This right served as the basis for a successful court challenge to extend anti-retroviral (ARV) treatment to infants to prevent mother-to-child transmission. Amongst other applications, it provides the following in the case of breakthrough infections: Every trial participant who becomes infected with HIV during the trial at a minimum has the right to free access to the highest standard of health care available in the public health sector,

The draft Participant Charter of Rights is unique in that it draws attention to the human rights issues in AIDS vaccine development within the context of the struggle for and entrenchment of human rights in the Constitution of South Africa.

or such higher standard negotiated at a national level. The draft charter includes a crucial right that applies specifically to research namely, not to be subjected to medical or scientific experimentation without informed consent. This right also seeks to provide some of the informed consent requirements for adolescent AIDS vaccine research and pronounces that every trial participant has the right to be presented with all relevant information in a way (including language) that he or she will be able to comprehend.

Other rights elaborated on in the draft include the right to privacy, equality (and non-discrimination) and dignity. The charter also contains a section on

responsibilities of trial participants. Finally, it has the potential to serve as an important bridge between the community and researchers and to guide us on the road to an AIDS vaccine in South Africa. A challenge that lies ahead is to ensure even broader consultation and participation in the Participant Charter and make it a living document.

What is the role of the SA HIV Vaccine Campaign?

The campaign is currently called the Masikhulwane SAAVI Community Involvement Programme. Masikhulwane aims to facilitate the creation of a South African society working in a mutually-beneficial and meaningful partnership with researchers within a vibrant human and legal rights environment. This we aim to achieve through organisational development, strategic collaboration, communication, education, training and development and through the promotion of human rights. We hope that in the end, communities and researchers will grow together.

What can India learn from your programmes on community education and preparedness?

Since we are striving to be a learning organisation, we would like to assume that India and South Africa can learn from each other. We follow similar methodology and our history will never allow either of our countries to forget the importance of the creation of a vibrant human rights culture. We work with communities that are poor, where illiteracy rates are high and where we have not reached gender equality.

However, South Africa does have a national programme for community

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◀ *Contd. from 2*

involvement in AIDS vaccine research. That could be one area where we can learn from each other. While we embark on national, provincial and site level education and empowerment of communities, we can learn from India about the gender work that has been going on in India. Our educational materials and the drafts participants' charter could also be useful to the India programme.

You have also been working with adolescents as potential volunteers in AIDS vaccine trials. Tell us about the ethical and legal challenges involved in enrolling them?

The preparation for adolescent trials has been and is a major collaborative effort on the part of SAAVI. The challenges and sensitivities of adolescent research must be acknowledged along with the need for adolescent research and clinical trials. SAAVI has, for a number of years, engaged in developing an ethical framework involving human and legal rights for adolescent AIDS vaccine research. Some of the discussions facilitated by the HIV/AIDS Vaccines Ethics Group are available on the SAAVI website.

The Masikhulisane SAAVI community involvement programme routinely involves the youth sector in its activities and involves communities in discussions about adolescent trial participation. Trial sites that are considering adolescent trials have begun to set up adolescent CABs and have engaged adolescent groups directly. HAVEG has held fora involving a range of community participants, relevant organisations and bioethicists in addressing ethico-legal questions about adolescent participation.

SAAVI groups, including HAVEG, the Masikhulisane SAAVI community involvement programme and the socio-behavioural group have also been working on aspects of adolescent research.

The challenges before us are therefore manifold. The meaningful involvement of communities and adolescents themselves continues to be a challenge. The complex ethico-legal framework and the sensitivities of dealing with his vulnerable age group are other key challenges. Ethical guidelines in South

Africa that apply to adolescent research are also not optimally harmonised. These challenges, in some respects, are also exacerbated by circumstances of underdevelopment in some targeted communities. The legal framework is not complete. More than one piece of legislation (the National Health Act, 2003 and the Children's Bill 2004) will have relevance for adolescent research, and regulations that will impact on the issue still have to be drafted by DoH and published for public comment. ■

Working together for an AIDS vaccine

IAVI's strategy has been to create coalitions and partnerships amongst non-government organisations (NGOs) and community based organisations (CBOs) — both within and amongst countries — that facilitate participation, information exchange and on-going communication and support for the conduct of safe and ethical preventive AIDS vaccine trials. One such initiative led by the IAVI India office was the organisation of a meeting between members from the South African AIDS Vaccine Initiative (SAAVI) and key NGO partners of the IAVI India programme on September 20, 2005. The meeting allowed participants to share experiences, opportunities and challenges in the context of community mobilisation for AIDS vaccine research and development in their respective countries, both of which have limited resources.

Many similarities were apparent during the deliberations on challenges faced in mobilising the community. These included managing expectations, prioritisation of resources between prevention, care and treatment, illiteracy and lack of basic awareness on HIV/AIDS, poverty, gender inequality, stigma and discrimination associated with the disease and strategies to ensure better coordination between diverse players working in the field to maximise resources available for the development of an AIDS vaccine.

Exchanges of experiences between the Indian NGO representatives and SAAVI members provided a better understanding of key areas in community involvement such as integration of care and treatment along with prevention including vaccine development, importance of disseminating accurate and transparent information on a regular basis to community members, addressing regional cultural sensitivities and the importance of community advisory boards in the context of community mobilisation.

Discussions underscored the fact that while core challenges of involving communities remain universal, regional cultural sensitivities need to be sufficiently addressed. The meeting reiterated the principle that community outreach should underline the trial process, so that communities at large can ultimately benefit. Community involvement is not easy, but it is essential. The meeting was a significant first step in the process of developing a framework for multi-national collaborations in an effort to develop better tools for community mobilisation.

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enforcement, cosmetics, and biological products. The government plans to eventually set up a cooperative agreement with the FDA, whereby, according to the health ministry, regulatory approvals granted in the US would be valid in India and vice versa. Dr Ramadoss is already in talks with the FDA to work out the process.

The implications of a centralised drug control system overseen by a national regulator are significant. In the current scenario, the regulation of drugs is decentralised, with individual state drug authorities reporting to the Drug Controller General of India in the Central Drugs Standard Control Organisation. This system has led to inconsistencies drug laws and the quality of drug testing throughout the country.

The overall feeling, articulated by Professor S D Seth, (Retd) Chair in Clinical Pharmacology, Indian Council of Medical Research (ICMR), is that the creation of an independent world-class

drug regulatory body will lead to more rigorous and consistent regulation of drugs and higher quality standards.

Future plans of the regulatory body will impact IAVI's work in India. Under the AIDS vaccine programme, the Government of India and IAVI are working towards accelerated vaccine research and development and access of a preventive AIDS vaccine. The candidate vaccines will go through three phases of clinical trials before being manufactured in the country. Therefore, in anticipation of multiple Phase I trials, IAVI has facilitated the setting up two 'centres of excellence' for AIDS vaccine clinical evaluation in India, which include a data management unit and a laboratory dedicated to clinical trial activities. Clinical trial staff at both sites has been trained in Good Clinical Practice (GCP).

Both the government and industry are promoting a culture of global GCP quality trials. In its white paper – 'Global Clinical Trials in India – Prospects and Challenges', released in November 2005, Federation of Indian Chambers

of Commerce and Industry (FICCI) has taken the lead to set up an expert committee to identify the requirements and opportunities in the sector and suggest the way forward in a time-bound manner. The paper focuses on the fact that GCP is a shared responsibility amongst sponsors, investigators and regulators. It also discusses capacity building and career options in clinical research.

In another development, the Central Drug Research Institute in Lucknow (Uttar Pradesh), among the country's premier biomedical research centres, has received new fund allotment from the government to discover and develop new chemical formulants in disease areas of national priority.

In view of the vibrancy evident in the health sector with regard to research, regulation and the development of new drugs and vaccines to alleviate India's disease burden, experts now believe that an AIDS vaccine could be available in less than a decade, though probably not in the next five years. ■

EVENTS UPDATE

GAVI Partners' Meeting

Vaccine research for the 'big three' (AIDS, malaria and TB) should be a priority, said Bill Gates, Chairman of the Bill and Melinda Gates Foundation which funds GAVI (the Global Alliance for Vaccines and Immunization), at the Third GAVI Partners' Meeting in New Delhi on December 7-9, 2005.

GAVI's work in the past five years has seen an improvement in immunisation coverage rates. The key to success has been its support of the country-driven process and strong partnerships.

Speaking at the inauguration, Prime Minister Manmohan Singh said that

the National Rural Health Mission (NRHM) would revitalise immunisation programmes.

Julian Lob-Levyt, Executive Secretary and CEO of GAVI informed that the global community, in the form of the Commission for Africa, G-8 commitments and Live Aid, has endorsed the cause of addressing vaccine preventable diseases as a priority. He said that GAVI is committed to exploring innovative financing instruments, such as advanced market commitments (AMCs). The GAVI-led International Finance Facility for Immunisation (IFFIm) initiated earlier in 2005, has raised about US\$4 billion for the promotion of new vaccines.

One clear message from the GAVI meeting was that greater research impetus is needed for HIV/AIDS, malaria and TB. Dr Seth Berkley, President and CEO of IAVI and a GAVI board member said that GAVI has successfully raised resources, but countries' own contributions must increase.

A major recommendation made at the meeting was that GAVI must make provisions now for future vaccines so that they are quickly accepted in countries once they are available. For this to happen, successful models of innovative financing and policies are needed. This will spur research by assuring producers of markets, and benefit communities and countries that create favourable policies. ■

THE VACCINE TEXTBOOK

New Strategies for AIDS Vaccine Development

DR JEAN-LOUIS EXCLER AND DR SONALI KOCHHAR

The worldwide quest for an AIDS vaccine represents an unprecedented scientific and human challenge for the 21st century. Preventive vaccines represent our only long-term hope to stop the epidemic. Ideally an AIDS vaccine should induce both humoral (also known as antibody immune responses) and T cell (also known as cellular immune responses) responses.

In a few people, **virus-neutralising antibodies** are produced that, when fully effective, completely prevent virus particles hatched from infected cells from infecting new host cells. Though the mechanisms that lead to neutralising antibodies are relatively well understood, scientists are still unable to make molecules capable of inducing such antibodies. An international "Neutralising Antibody Consortium", coordinated and co-funded by IAVI, has been set up to determine how to stimulate the human immune system to make broadly neutralising antibodies against HIV.

The antiviral **cellular immune response** plays a crucial role in controlling virus replication, especially during the phase of acute infection. For a vaccine to induce cellular immunity a vaccine vector or 'de-

livery system' is required that can 'deliver' harmless particles or copies of particles of HIV-1 to the immune system in order to trigger the body's immune system, but not cause disease. A number of such vectors are currently being developed and tested in preclinical and early phase clinical trials. The more promising technologies include various recombinant vector vaccines and DNA vaccines used in multiple combinations. However, to date, individual vector systems have exhibited various deficiencies such as poor potency and negative effects of pre-existing immunity to the vectors. (See Table)

Scientific Challenges in Vaccine Development

AIDS vaccines could prevent either HIV infection or progression to disease and decrease transmission by reducing the HIV viral load. An effective preventive AIDS vaccine would 'teach' the body to recognise the HIV virus that causes AIDS and elicit an immune response that would defend against the virus when it enters the body. In case HIV infection occurs, the vaccine would help in a rapid clearance of infection and a lower persistent viral load. Such a vaccine will most likely

not prevent new HIV infection, but it would have both beneficial individual and epidemiological consequences. However, unlike other diseases, no animal model is known to predict vaccine protection against HIV/AIDS. The validity of animal models for protection will be resolved only when comparison of these animal results with the results of efficacy trials in humans are made possible.

Since most of HIV transmission occurs through sexual transmission, the research and development of an AIDS vaccine that would elicit protective immunity at the mucosal (linings of body cavities like the genital tract, anus and gut – ports of entry for HIV during sexual or breast milk transmission) level has received special attention. The conduct of animal studies and clinical trials however face methodological challenges such as the methods of sample collection as well as of the measurement of immune responses at the mucosal level.

New AIDS vaccine approaches

Since 1987, more than 40 vaccine candidates have been evaluated in safety and immunogenicity trials, and four candidates have progressed to efficacy trials. Classical vaccine strategies based on recombinant vector vaccines or whole-inactivated HIV have severe limitations. Most efforts to develop an AIDS vaccine have therefore focused on newer vaccine approaches.

Efficacy trials with **monomeric gp120** (Glycoprotein 120- A protein on the outer surface of the HIV envelope which has been studied as an experimental HIV vaccine because the outer envelope is the first part of the virus "seen" by neutralising antibodies) showed no efficacy against HIV infection in humans. Various modifications have been made to the structure of gp120 and some of these molecules have been tested among human volunteers. These have been shown to induce some neutralising antibodies.

DNA vaccines alone, even when engineered as synthetic HIV-1 genes with various delivery systems, have been disappointing, inducing weak immune responses in primates and humans.

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The Immune System

The body's complex mechanism to fight infection - produces an immune response to the pathogen (bacteria, viruses or parasites which cause disease). The response could include the production of antibodies (Y-shaped molecules that stick to and tag invaders such as viruses for destruction) to neutralise the pathogen, or T cell responses/cellular immune responses (white blood cells charged with destroying pathogen-infected cells) or both.

◀ Contd. from 5

Common Vaccine Types

Vaccine type	General description	Relation to AIDS vaccine
Whole-killed / whole-in-activated vaccines	<ul style="list-style-type: none"> • Uses the entire pathogen to stimulate an immune response • Pathogen is killed or is made inactive so that it is not alive and cannot cause infection • Vaccine causes the body to make an immune response that will protect against a live pathogen <p>Examples: injectable polio vaccine (Salk), cholera vaccine</p>	Whole-killed vaccines are not being tested in clinical trials as preventive AIDS vaccines.
Live attenuated vaccines	<ul style="list-style-type: none"> • Uses a weakened form of the pathogen • Pathogen is changed in a particular way so it will not be harmful • Introduction of this form of the pathogen into a human will mimic true infection (without causing disease) and will enable the body to produce an immune response <p>Examples: measles vaccine, oral polio vaccine (Sabin)</p>	Live attenuated vaccines are not currently being developed for use in humans because of safety concerns.
DNA vaccines	<ul style="list-style-type: none"> • Use copies of single or multiple genes from the pathogen; a gene is small piece of DNA (genetic material) that contains instructions or a 'code' to make protein (s) • Genes enter into human cells and use the cell's 'equipment' to produce some protein(s) of the pathogen encoded by the gene(s) • When the protein is produced, the immune system sees it as a foreign or harmful antigen and produces an immune response • The immune system remembers this response, which will prepare a response against the whole pathogen 	This is a common strategy being used for AIDS vaccine development, and many of the current AIDS vaccine candidates are DNA vaccines. DNA vaccines will not cause HIV infection, because the vaccine do not contain all the genes of the live pathogen.
Recombinant vector vaccines	<ul style="list-style-type: none"> • Use same strategy as DNA vaccines, but the genes are carried by a harmless or every weakened bacterium or virus, called a vector • Genes are attached to the DNA of the vector, carrying the genes into the human cell • Once in the human cell, genes produce protein(s) to which the body 	<p>This is a common strategy being used for AIDS vaccine development, and many of the current AIDS vaccine candidates are vector vaccines.</p> <p>Recombinant vector vaccines will not cause HIV infection because it contains copies of only one or several HIV genes, not all them. Many scientists believe that the addition of a vector will allow the vaccine to be more effective in creating an immune response than a DNA vaccine alone.</p>

Source: VAXlit AIDS Vaccine Literacy Toolkit, IAVI 2005

Vector Strategies

Live recombinant vector vaccines are either a live attenuated (weakened) viral or bacterial strain used as a vector to carry HIV genes encoding the antigens of interest. They are able to

stimulate both humoral and cell-mediated immunity.

- ❖ Pox vectors such as **vaccinia virus** vectors induce HIV-specific cellular immune responses but weak anti-

body responses. Other **pox vectors**, non-replicative in mammalian cells, have been developed including **canarypox**, **Modified Vaccinia**

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IN FOCUS

Good Clinical Laboratory Practices are a Critical Measure of Credible Trials

DR VD RAMANATHAN

When a new drug or a vaccine is discovered, it undergoes extensive testing. Only a few drugs or vaccines eventually receive marketing approval. This is to ensure that the product does not cause any untoward effect and at the same it is effective for the purpose for which it is designed. The route from the drawing board to the market is rather long but well defined. First, the product is tested in tissue culture systems and then in animal models. It is only after these stages, that a trial of the vaccine or the drug is done in human beings. Furthermore, these trials comply with the highest existing ethical and scientific standards to guarantee that the investigational product is fit in every sense for human use.

Human trials conducted have to conform to the principles of Good Clinical Practice (GCP) and the supporting laboratories follow Good Laboratory Practices (GLP). These ensure that high quality reliable data is generated. More recently, the need for evolving standards which fully incorporate the principles of GCP and are uniquely suited to qualify clinical laboratories involved in vaccine and drug trials has been recognised. Thus, a scheme has been developed to ensure that the quality, reliability and integrity of data generated in a clinical laboratory which undertakes the analysis of samples from clinical trials are good and adequate. This essentially has combined the principles of GCP and GLP and is called Good Clinical Laboratory Practices (GCLP).

Accreditation to GCLP is obtained by laboratories and the users of such ser-

vices, to provide assurance of the operating standards during the conduct of the trial. The laboratories involved in the scheme will include those that perform routine haematology, biochemistry and urinalysis, as well as special tests unique to the particular laboratory which include immunological tests, drug assays, pharmacokinetics etc. Further, sample processing and other activities involved in the collection and transportation of the samples in clinical trials are also included in the ambit of GCLP. The other



The Clinical Trial Centre, Tuberculosis Research Centre, Chennai

necessary components for GCLP compliance are regulatory inspection, organisation and personnel within the lab, development of standard operating procedures to execute the approved protocols, analytical plans/methods/method and systems validation, conduct of the work, analysis, management of data and reporting results.

The major elements of GCLP include training of laboratory personnel in GCP, operation of instruments, writing standard operating procedures, maintaining all records pertaining to personnel and equipment, tests performed and reporting and archiving of the results obtained.

A GCLP compliant laboratory will have adequate safety provisions for both the involved personnel as well as the environment so that no harm results from the laboratory procedures. The principles defined in these standards are in consonance with Japanese, American and European regulatory agency regulations.

A UK-based independent consultancy firm called Qualogy Ltd, which has evolved these guidelines in association with the British Association of Research Quality Assurance (BARQA), inspects and gives accreditation to clinical laboratories. The Core Laboratory, London of the International AIDS Vaccine Initiative (IAVI) was the first laboratory in the world to receive GCLP accreditation in May 2004. The Core Lab team assists various laboratories involved in IAVI-sponsored clinical trials in implementing and following GCLP.

IAVI has not only been sponsoring AIDS vaccine trials according to the principles of GCP and GLP, but has also been training laboratory personnel in various centres involved in this activity. These training sessions are conducted twice a year and follow-up meetings are held periodically. The laboratory staff from the Vaccine Trial Centres at the National AIDS Research Institute and Tuberculosis Research Centre (the sites for the AIDS vaccine trials in India) has been trained in GCLP at the Core Laboratory, London, UK and receive regular follow-up training.

The author is the Deputy Director, Department of Clinical Pathology, Tuberculosis Research Centre, Chennai. ■

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Ankara (MVA) or fowlpox viruses. Although very safe in humans, they are less immunogenic than vaccinia. Recombinant canarypox vectors induce cellular immune responses in a limited proportion of recipients (15-30%). The results of the immune responses induced by MVA are still awaited.

- ❖ **Prime-boost combinations** using a DNA vaccine for priming or preparing the immune system and recombinant vector vaccines for boosting the response elicited the best cellular immune results in macaques that showed lower virus loads and prolonged survival following pathogenic challenge. Recently, a prime-boost regimen with DNA + MVA expressing genes from HIV-1 subtype A was tested in human volunteers and showed disappointing results. Less than 20 percent of recipients developed immune responses. Different MVA constructs are being tested to ascertain whether they will show signifi-

cant benefit. Other prime-boost regimens with different vectors will also be tested.

- ❖ **Human adenovirus** types 4, 5, and 7 can be administered orally or intranasally and can induce immunity both at the mucosal and systemic level. Recently, a recombinant Ad5 was found to successfully induce cellular immune responses in macaques, to attenuate infection and mitigate disease progression after a pathogenic challenge. It induced strong immune responses in up to 82 percent of human volunteers without pre-existing immunity. Other promising Adenovirus subtypes (11,35, 6) and Adeno from chimpanzees are at the pre-clinical stage of development.
- ❖ **Adeno-associated virus (AAV)** is a naturally occurring virus and is non-pathogenic. AAV-based vaccines induce both antibody and T-cell responses against HIV in animals. AAV-based AIDS vaccine clinical trials have been initiated in Europe and India. AAV subtype 1 seems to induce stron-

ger immune response in animals as compared to AAV subtype 2 and will be soon tested in humans.

- ❖ Other **virus vector systems** like the alphavirus replicons, attenuated vaccine strains of measles or yellow fever viruses, poliovirus replicons, rabies virus, vesicular stomatitis virus, or Sendai virus are being developed. Live recombinant bacterial vaccines have also been developed including bacillus Calmette-Guerin (BCG), *Salmonella*, *Listeria monocytogenes* and *Shigella*.

However in individuals previously exposed to the vector and who developed a residual immunity to the vector, most live recombinant viral or bacterial vectors show a decreased immunogenicity compared to naïve hosts. In order to circumvent this issue, efforts now focus on developing vaccines derived from vector subtypes rarely infecting humans.

Dr J L Excler is the Senior Medical Director, LAVI India and Dr Sonali Kochhar is the Medical Project Manager, LAVI India. ■

From the Editor's Desk

It has been the *Sankalp* team's constant endeavour to reach out to all our readers with the recent developments and news on HIV/AIDS and vaccines. As we enter yet another year, we bring you a new-look *Sankalp*.

Visit IAVI India's website www.iavi.org.in to sub-

scribe to *Sankalp* and indicate your choice of language edition (English, Marathi or Tamil). Send us your updated address and nominations for new subscribers. We would also welcome your feedback on the newsletter and suggestions on content, write to us at [www.Sankalp@iavi.org](mailto:Sankalp@iavi.org)

In a special New Year offer, the first 10 replies providing a feedback and suggesting 10 names and addresses for new subscriptions will receive a complimentary subscription to the science and environment magazine *Down to Earth* for one year.

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IAVI is a scientific organisation founded in 1996 whose mission is to ensure the development of safe, effective, accessible, preventive HIV vaccines for use throughout the world. IAVI focuses on four key areas: accelerating scientific progress; education and advocacy; ensuring vaccine access and creating a more supportive environment for industrial involvement in HIV vaccine development.



IAVI's financial and in-kind supporters include the Bill & Melinda Gates, Rockefeller, Alfred P. Sloan and Starr foundations; the governments of Canada, Denmark, the European Union, Ireland, the Netherlands, Norway, Sweden, the United Kingdom and the United States; multilateral organisations such as the World Bank; corporate donors including Becton, Dickinson & Co., Continental Airlines and DHL; leading AIDS charities such as Crusaid, the Phoebe W. Haas Charitable Trust B. and other generous corporate and individual donors around the world.

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