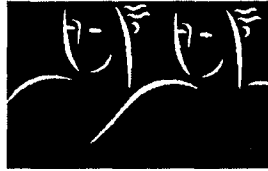


Canadian AIDS
Society



Société canadienne
du sida

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HIV Vaccines - A Brief Overview

A vaccine is a medicine that teaches the body's immune system to recognize and protect against a disease caused by an infectious agent, such as a bacterium or a virus. When a person is given a vaccine against a specific disease, the vaccine causes a number of responses from that person's immune system. These responses are stored in the memory of the immune system, so that the immune system is "on alert" against that specific disease. If the person is later exposed to that specific disease, the stored responses are released to protect against infection by the disease.

Vaccines save millions of lives each year and prevent many more people from getting sick. They are one of the most powerful and cost-effective health interventions available today. For example, extensive use of the smallpox vaccine eradicated that disease from the world. As well, widespread vaccination against polio has reduced the number of cases dramatically; today, the Western Hemisphere, Europe, and many parts of Asia are free from polio.

Vaccines exist for many other diseases including measles, chicken pox, influenza, hepatitis A and B, mumps, pertussis and rubella. However, there are a number of important diseases for which there is no effective vaccine, including HIV/AIDS, malaria and tuberculosis. When properly manufactured and used, vaccines are among the safest of medicines. Vaccine safety is ensured by undertaking extensive research in laboratories, animals and human volunteers before the vaccine is widely used. As well, after a vaccine is approved for public use, its safety is continuously monitored by national and international health agencies.

Is a vaccine a cure? Most of the time, when we talk about vaccines we are referring to preventive vaccines - i.e., medicines that protect people who do not have a disease from getting that disease. These vaccines do not provide a cure. Scientists are also trying to develop what are called "therapeutic vaccines" for HIV, hepatitis, cancer, and a number of other conditions. Therapeutic vaccines are designed to treat disease, not to prevent it.

How likely is it that a preventive HIV vaccine will be developed? The consensus is that the scientific progress over the last decade has now made a vaccine against HIV an achievable goal. However, it is also important to note that vaccine development is a long and complicated process, and that the first generation of HIV vaccines are likely to be only partially effective - i.e., they will not prevent HIV infection and/or AIDS in everyone who is vaccinated and exposed to HIV.

An ideal HIV preventive vaccine would: (from IAVI Scientific Blueprint)

- be safe for use in children, adolescents, and adults, including pregnant women
- be effective regardless of the ethnicity or the nutritional and health status of the target population;
- protect individuals against all subtypes of HIV;
- protect against any route of HIV infection;
- be inexpensive to manufacture;
- be easy to transport and administer;
- be stable under field conditions (e.g. hot and humid tropical climates with limited refrigeration capacity); and
- provide long lasting protection - i.e., require few (if any) follow up inoculations.

CAS and HIV Vaccines

In 2000, CAS and the International AIDS Vaccine Initiative (IAVI) began discussing a possible partnership. In 2001, CAS became IAVI's Canadian partner through a formal partnership. IAVI is a global organization working to speed the development and distribution of preventive AIDS vaccines. IAVI's work focuses on four areas: mobilizing support through advocacy and education; accelerating scientific progress; encouraging industrial participation in AIDS vaccine development; and assuring global access.

The formal CAS-IAVI partnership, which has been renewed until 2004, includes an agreement to work together in Canada:

- to increase political commitment for HIV vaccine development and delivery,
- to increase public awareness about the need for a preventive vaccine,
- to increase financial support for HIV vaccine development and delivery from the government, industry and individual donors,
- to increase the interest and involvement of the scientific community and NGOs in vaccine development and delivery, and
- to increase the knowledge, skills and advocacy capacity of community-based HIV/AIDS organizations around vaccine development and delivery issues.

In 2002, CAS developed a three-year framework for our vaccine and microbicide-related activities. This framework outlines the extensive work that CAS proposes to do in policy analysis, advocacy, capacity building, communications and strategic alliances. As a means of supporting this work, IAVI has agreed to fund these activities through the creation of a new part-time position at CAS.

CAS has undertaken a number of activities since 2000, including providing information, resources and skills-building opportunities for its members through venues such as the Canadian HIV/AIDS Skills Building Symposium. Many resources were developed for the results of the AIDS-VAX clinical trial, in collaboration with the HIV/AIDS Legal Network. In addition, CAS

has been developing closer links to researchers through the Canadian Association of HIV Researchers (CAHR), the Canadian Network for Vaccines and Immunotherapeutics (CANVAC) and the Canadian HIV Trials Network (CTN).

CAS and its partners, including the Canadian HIV/AIDS Legal Network, CAHR and CANVAC, have been advocating for the development of a Canadian HIV Vaccine Plan. CAS acts as community representative on the Steering Committee for the development of the Plan.

In 2003-04, CAS coordinated a project funded by CANVAC to develop a strategic plan for vaccine-related capacity-building initiatives at the grassroots level. The project also explored the possibility of coalition-building activities with national consumer advocacy organizations in the areas of cancer, HIV and HCV.

Community Involvement and HIV Vaccines

(The following is from the International Council of AIDS Service Organization's Vaccine primer)

Involvement by individuals and community groups in HIV vaccine development is critical to the success of the HIV vaccine effort. This section provides reasons why communities should be involved and ways in which they can participate in HIV vaccine trials. It also presents a list of questions community groups can ask researchers involved in the trials. Community representatives can help to ensure that HIV vaccine research is firmly established on the international agenda and, once a vaccine is developed, that it will be available in those countries where it is most needed. As well, community representatives have an important role to play in all stages of the design, planning and implementation of HIV vaccine trials and in the dissemination of results from these trials. The involvement of community representatives will help to make volunteers more comfortable with the trial and increase their commitment and follow-up rates.

Another way for community representatives to become involved is by working with and informing communities. Community education is needed now to prepare people for the research process, and to lay the foundation for vaccination programmes in countries around the world. Community representatives can accomplish this by:

- ***Assessing and shaping current attitudes and awareness about HIV vaccines.*** Discuss HIV vaccines with people. Help them understand the role vaccines might play in controlling HIV/AIDS. Use local meetings and networks as an opportunity to discuss vaccine development. Address people's fears.
- ***Linking with local, national and global information sources.*** Internet-based resources are an excellent way to find information on HIV vaccine development (see the list of websites at the end of this document). At the local level, develop links with medical centres, ministries of health and others involved with AIDS vaccine development.
- ***Sharing information.*** The international effort to develop an HIV vaccine can benefit from the experiences of your community. Participating in local, national and international conferences,

joining local HIV/AIDS prevention and care networks, and publishing in newsletters and on websites are good ways to share information. It is also important to contact local media and make sure they are well informed about vaccine development.

- ***Integrating knowledge about vaccine development into HIV/AIDS prevention messages.***

Vaccine development should be viewed as one part of a broader HIV/AIDS prevention effort. Use existing community outreach networks to discuss HIV vaccine development.

Canada and HIV Vaccines

In Canada, some work is being done to develop candidate HIV vaccines in the laboratory and to test these vaccines on animals. There have been no Phase I/II clinical trials of preventive HIV vaccines in Canada. One Phase III HIV vaccine trial took place partly in Canada – a multinational trial of the AIDSVAX® B/B Gp 120 experimental vaccine produced by VaxGen Inc. (information from Legal Network info sheet #1). The three Canadian sites were in Montreal, Toronto and Vancouver. CAS and the Legal Network produced information resources and a press release related to the results of the trial, announced in February 2003.

Aside from the AIDSVAX trial, about \$CAN 2.14 million is being spent each year in Canada for HIV vaccine research. The Canadian Network for Vaccines and Immunotherapeutics (CANVAC) has been investing about \$CAN 1.3 million annually in HIV vaccine biomedical research and \$CAN 140,000 annually in HIV vaccine behavioural research. The Canadian Institutes of Health Research (CIHR) has been investing about \$CAN 700,000 annually in HIV vaccine research. (Legal Network info sheet #1)

In addition, Canada has contributed to international HIV vaccine initiatives through the Canadian International Development Agency. In June 2000, CIDA announced a \$5 million contribution to the International AIDS Vaccine Initiative (IAVI) over 2 years. In July 2002, at the G8 Summit, Prime Minister Jean Chrétien announced that Canada will contribute \$50 million over three years to support the work of the International AIDS Vaccine Initiative (IAVI) and the newly formed African AIDS Vaccine Partnership (AAVP) towards the research and development of an HIV vaccine.

Some community initiatives have developed around HIV vaccines over the past three years. Besides the above-mentioned CAS initiatives, the Canadian HIV/AIDS Legal Network has been active both domestically and internationally. Domestically, in conjunction with the Centre for Bioethics of the Clinical Research Institute of Montréal, the Legal Network started working in late 1999 on the legal, ethical, and human rights issues raised in Canada by the development and eventual availability of HIV vaccines. In June 2002, the Legal Network launched *HIV Vaccines in Canada: Legal and Ethical Issues: An Overview*, along with eight info sheets. The overview is a condensed version of a larger discussion paper. The Legal Network has published a series of articles on legal, ethical, and human rights issues raised by the development of HIV/AIDS vaccines in the Canadian HIV/AIDS Policy & Law Review.

In 2003, the Legal Network hosted a meeting of international advocates in microbicides,

treatment and vaccines to discuss joint advocacy strategies. Several resources were developed surrounding this initiative.

Web Resources on HIV Vaccines

Canadian sites

Canadian Network for Vaccines and Immunotherapeutics (CANVAC) www.canvacc.org
The CANVAC site includes reports and descriptions of their scientific programmes.

Canadian HIV/AIDS Legal Network www.aidslaw.ca

This site includes many useful resources, including a series of info sheets on HIV vaccines in Canada, a brief document on legal and ethical issues on vaccines in Canada, as well as resources on international legal and ethical issues related to vaccines.

Other sites

International AIDS Vaccine Initiative (IAVI) www.iavi.org

IAVI's site includes many resources, including fact sheets, backgrounders, briefing papers, blueprints, and their newsletter, *IAVI Report*, and its abridged, reader-friendly version, *VAX*, to which groups can subscribe to keep up to date on vaccine developments.

AIDS Vaccine Advocacy Coalition (AVAC) www.avac.org

(USA) AVAC is an American group focussed on grassroots advocacy. Their site includes a wealth of information, including two key resources: yearly updates on global vaccine development (the most recent is *how to fight a Disease of Mass Destruction*), and the *HIV Vaccine Handbook*.

International Council of AIDS Service Organizations (ICASO) www.icaso.org

ICASO has produced several resources for community groups, including a vaccine primer, and an updated introduction to vaccines for community groups.

World Health Organization and Joint United Nations Programme on HIV/AIDS

www.who.int/HIV-vaccines